Jurnal Sains dan Teknologi
Volume 11 Number 2, Tahun 2022, pp. 274-282
P-ISSN: 2303-3142 E-ISSN: 2548-8570
Open Access: https://doi.org/10.23887/jstundiksha.v11i2.51055

Various Comparisons of White Sticky Rice with Red Rice Toward the Volume of Brem Drink and Organoleptic Test Tape Foods

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ARTICLE INFO

Article history:
Received Auguts 04, 2022
Revised August 09, 2022
Accepted October 14, 2022
Available online October 25, 2022

Kata Kunci:
Tape Beras Merah, Brem, Uji Organoleptic, Hedonik

Keywords:
Red Rice Tape, Brem, Organoleptic Test, Hedonic

ABSTRAK

Pengaruh nilai gizi tape beras merah terutama berbeda kandungan serat dan antioksidan dengan tape ketan sebagai inovasi baru pangan kesehatan. Tujuan dari penelitian ini adalah membuat tape food yang terbuat dari perbandingan beras ketan dengan beras merah terhadap volume minuman brem yang dihasilkan dan uji organoleptik tape food. Penelitian ini menggunakan 3 desain yaitu: penelitian eksperimen sejati untuk perlakuan tape beras merah terhadap volume minuman brem; quasy eksperimental untuk pengukuran skor tes organoleptik dan hedonis dan pra eksperimen untuk jumlah panelis. Pengumpulan data dari jumlah volume minuman brem dan uji organoleptik dan hedonik. Analisis volume minuman brem akibat perlakuan menggunakan ANOVA dan jika ada perbedaan nyata dianalisis dengan uji LSD menggunakan uji pos hoc. Uji organoleptik dan hedonik dilakukan untuk menentukan skor masing-masing uji organoleptik dan hedonik oleh panelis. Hasil analisis ANOVA terhadap volume produksi minuman brem dari ketiga perlakuan menunjukkan perbedaan yang nyata. Hasil uji LSD menunjukkan bahwa variasi perbandingan beras ketan: beras merah 3:1 berbeda nyata pada perlakuan 1:1 dan terhadap perlakuan 1:3. Perlakuan perbandingan beras ketan : beras merah 1 : 1 tidak berbeda nyata dengan perlakuan perbandingan beras ketan : beras merah 1:3. Uji organoleptik dan hedonik serta karakteristik yang dihasilkan dari tape beras merah, dievaluasi dengan skor uji organoleptik dan hedonik.

ABSTRACT

The effect of the nutritional value of red rice tape is mainly different in fiber and antioxidant content, with sticky rice tape as a new health food innovation. The purpose of this study was to make a tape food by comparing glutinous rice with brown rice to the volume of brewed brem and the organoleptic test of tape food. This study used 3 designs: an accurate experimental study for the treatment of red rice tape on the volume of brem drinks; an experimental quasi for measuring organoleptic and hedonic test scores; and a pre-experiment for the number of panelists. Collecting data from the volume of brem drinks and organoleptic and hedonic tests. Analysis of the volume of brem drinks due to treatment using ANOVA and if there is a significant difference analyzed by LSD test using post hoc test. Organoleptic and hedonic tests were performed to determine the score of each organoleptic and hedonic test by the panelists. The ANOVA analysis of the production volume of Brem drinks from the three treatments showed significant differences. The results of the LSD test showed that the variation of the ratio of glutinous rice: to brown rice 3:1 was significantly different in the 1:1 treatment and the 1:3 treatment. The treatment of the ratio of glutinous rice: brown rice 1: 1 was not significantly different from the comparison treatment of glutinous rice: brown rice 1:3. Organoleptic and hedonic tests, as well as characteristics produced from red rice tape, were evaluated by organoleptic and hedonic test scores.

1. INTRODUCTION

Tape is a type of food that contains alcohol caused by fermentation of yeast. Various type of yeast influence toward tape result. Various of brands yeast in Indonesia market including NKL (Na Kok Liong), LBC (Lebih Baik Coba) and fermipan as know bread yeast. NKL white glutinous tape yeast filtrate has antimicrobial activity can inhibit the growth of Propionibacterium acnes bacteria (Nurjannah & Nurhikmah, 2020; Purwanti & Dasuki, 2018). Bread yeast can increase the resistance of carp (Cyprinus carpio L) to Aeromonas hydrophila bacterial infection, because yeast cells contain immunostimulating ingredients such as -glucan, nucleotides, mannan, oligosaccharides and chitin. Immunostimulatory ingredients of yeast will increase phagocytic activity, complement, lysozyme, serum Ig and result in increased disease resistance (Firdausni, 2013; Manoppo & Kolopita, 2016). Materials commonly used to

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make tape are materials that contain carbohydrates. Before making the tape foods, it is necessary to pay attention to the quality of the tape foods, seen from the color, sweet taste and soft texture of the tape foods (Abdillah et al., 2014; Akbar & Yunianta, 2014).

Glutinous starch contains less than 1% amylose and is dominated by amylopectin, so when cooked it is very sticky (Djajati et al., 2013; Refdi & Fajri, 2017).The mechanism of tape fermentation is starch hydrolyzed by the amylase enzyme produced by amylolytic molds, yeasts or bacteria. Fermentation is one of the oldest and most economic methods in preserving the quality and safety of foods; it not only prolongs the shelf life but also reduces volume, shortens cooking times, provides better nutritional bioavailability, enhances flavor and aroma, and can be considered as a functional food that exerts health promoting benefits (Serfiyani et al., 2020; Wu et al., 2023). Hydrolysis of starch is the process of breaking down starch molecules into simpler constituent parts such as dextrin, isomaltose, maltose and glucose (Li et al., 2021; Zhao et al., 2022). The chemical composition of white glutinous rice consists of carbohydrates 79.4%; 6.7% protein; 0.7% fat; Ca 0.012 %; Fe 0.008 %; P 0.148 %; B vitamin 0.0002% and water.

Glutinous tape is made from glutinous rice which is rich in starch, has a soft and watery texture with a sweet, sour, and slightly alcoholic taste. The alcohol content in sticky rice tape is about 3-5% with a pH of around 4. The basic ingredients of tape are mixed with rice or other carbohydrates, rarely done in the community. One of the mixed carbohydrates is red rice. Red rice (Oryza nivara) is another staple food in Indonesia besides white rice which has high health value (Almeida et al., 2022; Moch Isnaeni Nugraha et al., 2018). One of the producers of red rice in Bali is Mengesta village, Penebel district, Tabanan regency, Bali Province. The superior product of this area is a rice producer with distinctive characteristics, namely local red rice of sandalwood type with very good quality (RPJPD Tabanan Regency: 2006.– 2025 in (Parwati et al., 2021).

Red rice contains many phenolic compounds ranging from simple phenolic compounds to complex compounds that bind to glucose groups as glycons. One group of phenolic compounds that have benefits as antioxidants is a group of flavonoid compounds (Beerelli et al., 2019; Gothe et al., 2022). The group of flavonoid compounds such as anthocyanins (a glycon form of anthocyanidins) is a group of natural ingredients in plants that act as antioxidants. Flavonoid compounds are thought to be responsible for the substance that gives red rice its color. Red rice is rice with a red color because the aleurone contains a gene that is thought to produce anthocyanin compounds or other compounds that cause a red or purple color (M. I. Nugraha et al., 2018; Wang et al., 2022).

The nutritional composition of red rice per 100 grams consists of 7.5 g protein, 0.9 g fat, 77.6 g carbohydrates, 16 mg calcium, 163 g phosphorus, 0.3 g iron, and 0.21 g B1 vitamin. While the nutritional content for white rice per 100 g is 6.8 g protein, 79 g carbohydrates, 1.2 g iron, 0.5 g zinc, and 0.6 g fiber. Red rice has better nutritional content than white rice, such as the content of fiber, essential fatty acids and some vitamins is higher than white rice. Red rice is rich in B and E vitamins, so eating red rice is not easy to cause bloating. The peculiarity of red rice is that it has functional properties as an antioxidant because of its high anthocyanin content (Winarti et al., 2018; Yuliati et al., 2012). Brem is traditional fermented food or fermented beverage, a non-distilled ethnic alcoholic drink from Indonesia prepared from glutinous rice. Liquid brem is made from fermented mash of white glutinous rice using a dry starter (Citraresmi et al., 2014; Udin et al., 2020).

There are two types of brem : brem cake (solid) and brem beverage (liquid), which is made of rice wine from Bali and Nusa Tenggara, but mostly known from Bali. In this research is a new innovation of tape foods and brem drink made from white sticky rice mixed red rice. Organoleptic test required to know including color, texture, smell and taste of new basic component in making tape foods and brem drink produced. The purpose of this study was to analyze the use of white sticky rice mixed with brown rice in making tape in terms of the volume of brem produced and organoleptic tests.

2. METHOD

This study using 3 design. First was true experimental design with CRD (Complete Randomized Design) with the formulation of Gasperz: t (r-1) ≥ 20 to measure brem drink volumes. Second design was true experimental research to organoleptic test of tape foods (Widiyanti et al., 2018). Third design was pre-experimental research because one of two researchers as panelist and usually consume traditional tape foods and brem drink. There were 3 treatments, namely variations in the ratio of white sticky rice: red rice (3:1 (T1); 1:1 (T3). (T2) was mean treatment 2 and (T3) was mean treatment 3. There were 8 replications in this study. The negative control was without yeast, and the positive control was without the addition of red rice in the manufacture of tape using NKL (Na Kok Liong) brand yeast tape and also with bread yeast (fermipan brand consit Saccharomyces cerevisiae of yeast). NKL yeast consist microbiological identification found 8 isolates of mold i.e. Mucor sp. and Aspergillus sp; 8 isolates of lactic acid bacteria ability to grow at

various temperatures, pH and NaCl concentration are Lactoccocus lactis ssp lactis. The yeast obtained 8 isolates were identified 2 isolates are Candida famata and Pichia angusta (Widiyanti et al., 2018). The procedure for making tape as follows. Weighing the two types of rice with the ratio of glutinous rice: red rice are 1; 1 : 1; 1 : 3 for treatment and control. The research subjects was various comparison of white stiky rice and red rice in produce of brem volume and researcher as panelist toward organoleptic test.

Data collection methods and instruments. Data collection in this research following procedures: rice soaked for 12 hours and drained for 1 hour. Steaming was done. Each 150 grams was weighed for treatment and control and placed in a container. A total of 2 x 150 grams were weighed for control of fermented sticky rice using NKL (Na Kok Liong) and fermipan brands of yeast. Each of the basic ingredients added 0.5 grams of sugar and 0.5 grams of yeast NKL for treatment, approval and control as the treatment formula and 2 times the control. Anaerobic incubation was carried out for 2 x 24 hours. Organoleptic pre-test was carried out because the panelist were only researcher who were accustomed to consuming tape foods with the reference criteria from organoleptic test including: color, texture, smell and taste. Brem was collected by squeezing and measuring the volume and alcohol content with an alcoholmeter. There were 2 instruments in this research with the following: first was instrument to measuring of brem drink volume, including: volume pipet and alcoholmeter and second was instrument for collecting scores in organoleptic test and hedonic test standard of tape foods. 3. The method of analysis Data analysis of brem drink produced in making tape foods using ANOVA analysis. Data analysis to organoleptic test of tape foods and hedonic test using instrument organoleptic test and hedonic standard for organoleptic test of foods. If there were significant difference result in analysis of brem drink volume caused by treatment there were continued analysis using Least Significant Different test.

3. RESULTS AND DISCUSSION

Results

Tape is a type of food that contains alcohol caused by fermentation of yeast. The sugarcontent of brem decreased during the fermentation, due to the decomposition of simplesugars into ethanol and carbon dioxide by the yeast's enzyme activity. Various comparison white sticky and red rice in making tape foods toward brem drink volumes, in Figure 1.

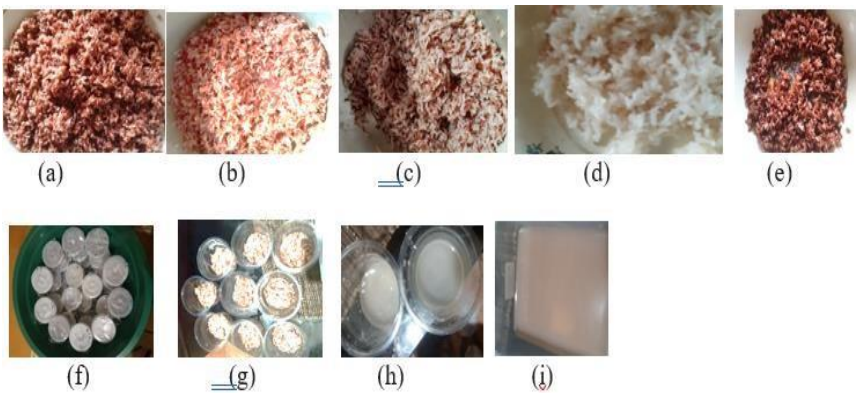

Figure 1. Treatment of Making Red Rice Tape Foods

Explanation:

(a) the ratio of glutinous rice: red rice 1 : 3
(b) the ratio of glutinous rice: red rice 1 : 1
(c) the ratio of glutinous rice: red rice 3 : 1
(d) Positiuve control
(e) Negative control
(f) Incubation
(g) Red Rice Tape
(h) ,(i) Brem collections

The results of the ANOVA analysis on the volume of brem drink produced in making tape foods from the three treatments showed significant differences as seen in the Table 1.

Table 1. Results of ANOVA Test

Brem					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	1875.000	2	937.500	285.326	0.00
Within Groups	69.000	21	3.286		
Total	**1944.000**	**23**			

The LSD test showed that the various in the ratio of white sticky rice : red rice 3 : 1 (T1) was significantly different to treatment 1:1 (T2) and to treatment 1:3. (T3). The treatment of the ratio of white sticky rice : red rice 1 : 1 was not significantly different from the comparison treatment of white sticky rice : red rice 1 : 3, as seen in the Table 2. Organoleptic test of positive control showed in Table 3, and Table 4. .Organoleptic test the ratio of glutinous rice: red rice showed in Table 5, Table 6, Table 7, Table 8, Table 9. Organoleptic test negative control showed in Table 11 and Table 12.

Table 2. Comparison of White Sticky Rice: Brown Rice

			Mean Difference			
No	**Tape**	**Tape**			**Lower Bound**	**Upper Bound**
1	2	18.75*	0.90632697	0	16.8652	20.6348
	3	18.75*	0.90632697	0	16.8652	20.6348
2	1	-18.75*	0.90632697	0	-20.635	-16.865
	3	0	0.90632697	1	-1.8848	1.88481
3	1	-18.75*	0.90632697	0	-20.635	-16.865
	2	0	0.90632697	1	-1.8848	1.88481

*. The mean difference is significant at the 0.05 level

Table 3. Organoleptic Test of Positive Control

Num	**Organoleptic test**																			
	Smell					**Level of Pleasure**					**Taste**					**Level of Pleasure**				
1	1	2	3	4	5 √	1	2	3 √	4	5	1	2	3	4	5 √	1	2 √	3	4	5

Table 4. Organoleptic Test of Positive Control

Num	**Color**					**Level of Pleasure**					**Texture**					**Level of Pleasure**				
1	1 √	2	3	4	5	1	2 √	3	4	5	1	2	3	4	5 √	1	2	3	4	5 √

Table 5. Organoleptic Test the Ratio of Glutinous Rice: Red Rice Was 3 : 1

Num	**Organoleptic Test**																			
	Smell					**Level of Pleasure**					**Taste**					**Level of Pleasure**				
1	1	2	3	4	5 √	1	2	3 √	4	5	1	2	3	4 √	5	1	2	3 √	4	5

Table 6. Organoleptic Test the Ratio of Glutinous Rice: Red Rice Was 3 : 1

Num	**Organoleptic Test**																			
	Color					**Level of Pleasure**					**Texture**					**Level of Pleasure**				
1	1	2	3	4	5 √	1	2	3	4 √	5	1	2	3	4	5 √	1	2	3	4	5 √

Table 7. Organoleptic Test the Ratio of Glutinous Rice: Red Rice Was 1 : 1 of tape

Num	Organoleptic Test																			
	Smell					Level of Pleasure					Taste					Level of Pleasure				
1	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
				√					√					√		√				

Table 8. Organoleptic Test the Ratio of Glutinous Rice: Red Rice Was 1 : 1 of tape

Num	Organoleptic test			
1	Color	Level of Pleasure	Texture	Level of Pleasure

Table 9. Organoleptic Test the Ratio of Glutinous Rice: Red Rice Was 1 : 3 of tape

Num	Organoleptic Test																			
	Smell					Level of Pleasure					Taste					Level of Pleasure				
1	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
			√					√				√					√			

Table 10. Organoleptic Test the Ratio of Glutinous Rice: Red Rice Was 1 : 3 of tape

Num	Organoleptic Test																			
	Color					Level of Pleasure					Texture					Level of Pleasure				
1	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
		√					√					√					√			

Table 11. Organoleptic Test Negative Control

Num	Organoleptic Test																			
	Smell					Level of Pleasure					Taste					Level of Pleasure				
1	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
	√					√					√					√				

Table 12. Organoleptic Test Negative Control

Num	Organoleptic Test																			
	Color					Level of Pleasure					Texture					Level of Pleasure				
1	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5

Explanations:

Smell scores : (5) Very sharp smeely of brem (4) brem (3) a bit smelly of brem (2) less smelly of brem (1) no smell of brem

Taste scores : (5) Very sweet (4) sweet (3) a bit sweet (2) less sweet (1) no sweet

Color scores : (5) Very red (4) Red (3) Redrish (2) less red (1) white

Texture scores : (5) Very smooth (4) Smooth (3) a bit smooth (2) less smooth (1) rigid

Discussion

The average volume of brem produced by the three treatments was smaller than the positive control using NKL fermented yeast. In the NKL brand yeast there are species of microorganisms that are amylotic. Ribbon yeast consists of molds (*Aspergillus, Amylomyces rouxii, Mucor* sp and *Rhizopus* sp.), yeasts (*Saccharomycopsis fibuligera, Saccharomycopsis Malanga, Pichia burtonii, Saccharomyces cereviceae* and *Candida utilis*) and bacteria Acetobacter, *Bacmancoccus* sp. (Fatimah et al., 2018; Tiara, 2021). Glutinous rice has amylose content of about 1-2%. The function of glutinous rice is as the main ingredient in the manufacture of tape and as a substrate for tape yeast microorganisms. Glutinous rice has a high

carbohydrate content of about 79% and also contains 6.7% protein, 0.7% fat, 12% water, 0.0002% vitamin B and 0.012% calcium. Glutinous rice also has a high amylopectin content compared to its amylose content, so it has a sticky texture after being drained (Kusharto et al., 2016; Refdi & Fajri, 2017).

Glutinous rice contains about 98% amylopectin and 2% amylose. The different types of yeast added that play a role in the fermentation process will affect the characteristics of the liquid pulp produced from fermenting cocoa beans in the manufacture of vinegar (Wulandari et al., 2019). The role of microorganisms in fermentation is divided into two based on the fermentation stage, mold (*Clamydomucor oryzae*) which converts starch into simple sugars and yeast (*Saccharomycopsis* sp. 1; *Saccharomyces* sp.) which converts sugar into alcohol and other compounds (Abdillah et al., 2014; Akbar & Yunianta, 2014). NKL white glutinous tape yeast filtrate can inhibit the growth of Propionibacterium acnes bacteria as an antibacterial at a concentration of 40% compared to white glutinous tape filtrate using LBC (Better Try) tape yeast (Nurjannah & Nurhikmah, 2020; Purwanti & Dasuki, 2018). The quality of the glutinous tape produced can be poor due to improper processing, for example the addition of excessive inoculum and too long fermentation time. The type and quality of the tape inoculum can also affect the manufacturing process, namely if the inoculum tape used is of good quality then the sticky rice tape produced will be good and vice versa if the inoculum tape used is of poor quality (Nurjannah & Nurhikmah, 2020; Purwanti & Dasuki, 2018).

The results of the treatment with the addition of baker's yeast (*Saccharomyces cerevisiae*) were not different from the natural treatment because baker's yeast only contained yeast that played a role in converting sugar into alcohol, the change of alcohol into acetic acid occurred naturally due to contamination. from the environment due to the absence of bacteria in baker's yeast. The composition of the brem produced from brown rice tape includes alcohol or bioethanol (C2H5OH) which is a biochemical liquid from the sugar fermentation process using a carbohydrate source with the help of microorganisms (Citraresmi et al., 2014; Febriana et al., 2018; Udin et al., 2020). Bioethanol is also referred to as one of the biofuels that is present as an alternative fuel that is more environmentally friendly and renewable. Bioethanol can be produced from plants that contain lots of cellulose compounds with the help of microbial activity (Moch Isnaeni Nugraha et al., 2018; Nursiwi, A., N et al., 2018).

The treatment with the addition of tape yeast had a total acid content that was not different from the yeast combination treatment. This is because the tape yeast condition contains yeast and acetic acid bacteria that play a role in the process of converting sugar into alcohol and then into acetic acid, so that acetic acid can be produced quickly and in large quantities (Wulandari et al., 2019). Microorganisms in tape yeast work synergistically. Aspergillus works to simplify starch, while *Saccharomyces* sp. and *Candida* sp. convert sugar from starch decomposition by Aspergillus into alcohol and other organic substances, then alcohol is converted into vinegar by Acetobacter (Islami, 2018; Mujdalipah, 2016). The types of microorganisms found in NKL brand yeast are *Amylomyces* sp, *Aspergillius* sp, *Mucor* sp, *Saccharomyces* sp, *Candida* sp. *Mucor, Rhizopus* and Amylomycetes molds produce saccharides and fluids, amylolytic yeast endomycopsis produces saccharides and a weak odor, non-amylolytic yeast Saccharomyces produces alcohol, Hansenula produces a refreshing aroma, Endomycopsis produces a characteristic odor and Candida produces a characteristic odor. Tape yeast also produces phytase enzymes. The content of yeast in 100 grams is 43 grams of protein, 3 grams of carbohydrates, 140 grams of calcium, 10 grams of water and 136 kcal calories (Islami, 2018). Pedicoccus lactic acid bacteria produce lactic acid and Bacillus amololytic bacteria produce saccharides (Ninsix, 2013).

In general, the red rice tape produced with various treatments showed organoleptic tests and hedonic values in terms of smell, taste, color and texture which were not much different from the positive control. The red rice tape produced variations in color, tape taste and a little sour brem with the same texture as the positive control, especially in the treatment the ratio of glutinous rice:brown rice was 3:1, as shown in Figure 1. The higher the percentage of NKL tape yeast added on the cassava processing tape, the more microorganisms, the more decomposing microbes in the tape, the more invertase enzymes are produced, so that glucose is converted into ethanol and consequently the reducing sugar content decreases (Abdillah et al., 2014; Purwanti & Dasuki, 2018). The higher the amount of tape yeast, the more yeast (*Saccharomices cereviceae*) and bacteria (*Acetobacter aceti*) in the sweet potato tape, this amylase enzyme can break down starch into glucose. Glucose will be converted into alcohol, so the amount of alcohol in sweet potato tape will be highe (Ninsix, 2013). Yeast cells contain 0.9% purines and pyrimidines, yeast extract contains 2.3% (Manurung et al., 2014). In S. cerevisiae, 12-20% of the total nitrogen may consist of RNA nitrogen, mainly in purine bases and pyrimidine nucleoproteins. These materials can increase the non-specific immune response of fish so that fish have high resistance to various pathogens (Manoppo & Kolopita, 2016). Various microorganisms can be added to the formulation in the manufacture of yeast tape as a reference. This study used yeast with the same weight of 0.5 grams with the brand NKL. Organoleptic and hedonic tests of the characteristics of red rice ribbons also affect the nutritional value of red rice ribbons.

The addition of sugar tends to increase the water content. The increase in yeast dose from 1 percent to 3 percent showed that the water content was not significantly different in the treatment without sugar or with sugar. The water content is affected by the amount of sugar. The addition of sugar tends to increase the water content both on the 3rd and 5th day (Abdillah et al., 2014; Purwanti & Dasuki, 2018). The presence of oxygen produced by *Saccharomyces cereviceae* can also oxidize sugarsto carbon dioxide and water, both of which occur in the glycolysis pathway. Under anaerobic conditions, yeast is more likely to ferment carbohydrates to produce alcohol. In the glycolysis pathway, the ethanol that has been produced is converted into esters, acetic acid and ketones as a source of tape aroma (Abdillah et al., 2014; Purwanti & Dasuki, 2018).

Besides containing carbohydrates, fats, proteins, fiber and minerals, brown rice also contains anthocyanins. Anthocyanins are red pigments found in the pericarp and tegmen (skin layer) of rice, or are also present in every part of the grain. The anthocyanin content in brown rice functions as an antioxidant. The red color of brown rice is due to the presence of anthocyanin pigments which include flavonoid components, and are antiatherogenic. Brown and black rice contain more anthocyanins and other phenolic compounds than white rice (Sutharut & Sudarat, 2012). Black rice and brown rice are potential sources of phenolic compounds. The taste of brown rice and black rice is not too sweet when compared to white glutinous rice, because it is rich in fiber, which is 2-3.32 grams per 100 grams. This makes brownrice and black rice not much affect blood sugar levels because fiber can inhibit the release of glucose (sugar) into the blood. In this study, various comparisons of white sticky rice with local brown rice were used and the tape organoleptic test and direct brem test were used as shown in Table 3-12. The simple alcohol content test in this study was 3% using an alcoholmeter. During the alcoholic vinegar fermentation process, the compounds contained such as sugar, salt and dissolved compounds in the material are metabolized by yeast into alcohol and CO2, and used by bacteria as a carbon source. The remnants of organic compounds such as glucose, sucrose and lactose contained in the fermentation substrate were calculated as total dissolved solids. During the fermentation process there is a decrease in sugar levels caused by yeast metabolism into alcohol and CO2. The type of yeast in cocoa fermentation has a significant effect on the degree of acidity (pH), total acid, total dissolved solids (TDS) and total sugar (Wulandari et al., 2019).

Organoleptic and hedonic tests as well as the characteristics produced from red rice tape, assessment with organoleptic and hedonic test scores showed positive control was the manufacture of tape food using glutinous rice only good smell, taste, color, texture the same as the manufacture of tape food made using white sticky rice ratio with brown rice is 3:1 (T1). The value of the color score and the level of enjoyment of the tape food in treatment 1 was better thanthe positive control. The positive control sense value is better than T1 but the hedonic test showsT1 is better than the positive control. The advantages of this research are: various organoleptic test of tape foods and new composition of tape foods and brem drink including carbohydrates, fats, proteins, fiber, minerals anthocyanins, flavonoids contains of red rice. The anthocyanins composed of red rice has functions as an antioxidant. The red rice rich fiber can inhibit the release of glucose into the bloodthat have benefit to health (Hasanah et al., 2019). The implication of research are: for the people and entrepeuner tape foods and brem drink as one of new innovation to development of foods industry. The limitation of this research are to measurement volume brem drink produced when making red rice tape foods and pre-organoleptic test of tape foods with the treatment various comparison white sticky rice and red rice. Recommendation for future researcher: to detection of component red rice tape foods both qualitative and quantitave and treatment in vivo to animal model using various tape yeast brands.

4. CONCLUSIONS

This research ere was significant differences the volume of brem drink produced from the three treatments various comparison in making red rice tape foods. The value scores oforganoleptic and hedonic tests positive control and T1 was similar that mean the addition of red rice in manufacture of tape food better in nutrient, organoleptic and hedonic test than positive control.

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