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The Effect of Purple Yam (*Dioscorea alata*) and Crookneck pumpkin *(Cucurbita moschata*) Substitution on Organoleptic and Chemical Properties of Dodol

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ABSTRACT

Dodol is a semi-wet food made from glutinous rice flour, coconut milk, and sugar, occasionally added with permitted food ingredients and other food additives. Purple yam and crookneck pumpkin can be added to dodol to change it. The objective is to determine how the substitution of purple yam and crookneck pumpkin may affect the chemical and organoleptic characteristics of dodol. The panelists used in this study were semi-panelists. This type of research is experimental with a completely randomized design (CRD), specifically 3 treatments and 3 repetitions using the hedonic test. Up to 30 students were trained, originating from the Department of Nutrition, Ministry of Health, Aceh. Utilizing the ANOVA (Analysis of Variance) and Duncan's New Multiple Range tests, data processing and analysis were performed. The most liked dodol is dodol with the addition of 80 g of purple yam and 40 g of crookneck pumpkin. Dodol organoleptic test results include taste, aroma, texture, and color. The proximate test findings demonstrated that the addition of 40g of crookneck pumpkin and 80g of purple yam had an impact on the levels of fat and carbohydrates, and had a significant impact on the color, taste, aroma, and texture. It also had a significant impact on the proximate test of the food's fat and carbohydrate content. According to the researcher's recommendations, the dodol should be cooked for a longer period and with more glutinous rice flour in order to reduce its water content and extend its shelf life.

Keywords: chemical test, crookneck pumpkin, dodol, organoleptic test, purple yam

Introduction

Increased Utilization of Local Food is a program that the Food Security Agency is aiming to implement in order to increase the supply of local food as a product that can help local small enterprises in the food sector. Owned natural ingredients are available in Indonesia and can be processed into a variety of cuisines, including a range of snacks. Snacks are tiny meals that are eaten in between main meals. They can be wet or dry and taste either sweet or savory. Local snacks include klepon cakes, ku cakes, bugis cake -different types of regional foods available throughout Indonesia, including corn, garut (arrowroot), ganyong, crookneck pumpkin, lesser yam, gadung, purple yam, and cassava (Utami et al., 2015).

Local food products also typically develop in accordance with regional consumer preferences. Therefore, these regional foods are closely associated with the local's way of life. Due to this, this product frequently refers to certain regions by names, such Gudeg Jogja, Dodol Garut, Jenang Kudus, and Nasi Cianjur (Yuliatmoko, 2011). Dodol is made from glutinous rice flour (Karunia, 2013). Food that is created and developed locally reflects the potential and resources of the area, as well as the local culture. As a result, the type, quantity, and quality of local food products will be greatly influenced by the local climate. This condition affects social conditions, the area's economy, and culture in addition to the land's adaptability, the type of yellow, the climate, and the characteristics of agriculture.

Purple yam (*Dioscorea alata*), a potential local and functional food source, is grown in Indonesia. Yam has been shown by numerous studies to have high protein content but low sugar

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content in addition to having high levels of carbs. However, the majority of users have not taken full advantage of it. One of the cultivated non-toxic roots is purple yam (*Dioscorea alata*). Purple yams originated in Southeast Asia and are now found in many places, particularly in tropical areas. The characteristics of purple yams include dried and yellowed leaves, and they start to be available for harvesting at around 6 to 12 months old in the dry season. The size and color of purple yams are variable, and the leaves come in various shapes and hues (An – Nuha, 2018).

Yellow crookneck pumpkin, also known as *Curcubita moschata*, is one of the food commodities with the lowest utilization rates. This particular variety of crookneck pumpkins is particularly well-liked in Indonesia since it has all the essential nutrients, including protein, carbs, and vitamins A, B1, and C, making it a readily available and healthy food source. Crookneck pumpkin output will be particularly high when the season arrives because it is a seasonal crop. Indonesia produces a lot of crookneck pumpkins. However, there is an imbalance between the supply and the consumption rate of crookneck pumpkins. In addition to being used to make traditional cakes, crookneck pumpkin is typically simply processed as a compote or boiled as a food ingredient. Despite having high nutritional values and bioactive components, such as beta-carotene, crookneck pumpkin has not been used to its full potential. One of the contributing factors is the community's poor understanding of the advantages of these food products (Fatoni et al., 2016).

One of the most recent innovations in the production of functional food products that are very beneficial to supporting health is the production of dodol. The culinary product known as "dodol" is particularly well-liked by consumers and is simple to manufacture. Dodol is a semi-wet food that is manufactured from glutinous rice flour, coconut milk, and sugar with or without the inclusion of approved food items and other food additives. The end product is a dough that ranges in color from light brown to dark brown and is quite stretchy. Each component has an impact on the dodol's elasticity, durability, flavor, and scent (Winarti et al., 2013).

Therefore, the choice of purple yam and crookneck pumpkin as additional ingredients in the preparation of dodol, as the addition of crookneck pumpkin in the manufacture of dodol is thought to reduce the unpleasant aroma found in purple yam, and the addition of these two ingredients is also thought to be useful in supporting the health of the intestinal microflora as well as antioxidants and can Because dodol itself has a texture that is not hard, easy to ingest, and easy to digest, it is also embraced by the community, from young children to the elderly. In order to boost the economic worth of the two plants, it is envisaged that the dodol product, which is made using purple yam and crookneck pumpkin, can add value to goods based on those two plants.

Based on the aforementioned context, the author wishes to investigate the effects of substituting purple yam (Dioscorea alata) and crookneck pumpkin (Curcubita moschata) on the chemical and organoleptic characteristics of dodol.

Methods

The inclusion of purple yam and crookneck pumpkin, as well as organoleptic analysis and chemical properties (including water content, ash, protein, fat, carbs, and crude fiber), were examined in this study utilizing an experimental method using a randomized series of 3 treatments and 3 repeats. Dodol is made using purple sweet potatoes and crookneck pumpkin, as well as various formulations, including 20 g, 40 g, 80 g, and 100 g of purple yam, as well as 100 g, 80 g, 60 g, and 40 g of crookneck pumpkin. In order to determine which formulation was most favored, samples were offered to 15 students at the Department of Nutrition, Poltekkes, Ministry of Health, Aceh. The results of a preliminary study for tests of chemical and organoleptic qualities were used to carry out the major research. There were 30 people on the panel for the organoleptic test. An organoleptic test was conducted using a hedonic scale. Using the proximate approach, the nutritional value test was conducted. Analyses were conducted using the ANOVA test to ascertain the analysis of organoleptic tests and chemical attributes. Duncan's multiple test will be used in the event that there is a large difference.

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Results

Organoleptic Characteristics of Dodol

Analysis of variance (ANOVA) results revealed that the inclusion of purple yam and crookneck pumpkin paste had a significant impact on the color of dodol with a P-value less than 0. 05. Due to the brown color that is generated, dodol that contains 80 g of purple yam paste and 40 g of crookneck pumpkin is preferred over dodol that contains 40 g of purple yam paste and 80 g of crookneck pumpkin.

Table 1. Results of Color Organoleptic Test in Dodol

Formulation	Average
40 g purple yam and 80 g crookneck pumpkin (FD1)	4.29
60 g purple yam and 60 g crookneck pumpkin (FD2)	4.64
80 g purple yam and 40 g crookneck pumpkin (FD3)	5.23
Average Score	4.72

Table 2. Results of Duncan's Test on Color

Formulation	N	Subset for alpha = 0, 05	
		1 (a)	2 (b)
40 g purple yam and 80 g crookneck pumpkin (FD1)	30	4.29 [a]	
60 g purple yam and 60 g crookneck pumpkin (FD1)	30	4.64 [a]	
80 g purple yam and 40 g crookneck pumpkin (FD1)	30		5. 23 [b]

The range of the panelists' preferences for the resulting dodol (4.69 to 5.11) indicates that they were generally 'neutral' to 'favorably impressed' with it. The addition of 80 g of purple yam pastes and 40 g of crookneck pumpkin with a characteristic sweetness to dodol goods yielded the maximum value. The panelists' least favorite dodol was the one with the addition of 80 g of crookneck pumpkin and 40 g of purple yam paste.**Table 3**. Results of Taste Organoleptic Test in Dodol

Formulation	Average
40 g purple yam and 80 g crookneck pumpkin (FD1)	4.69
60 g purple yam and 60 g crookneck pumpkin (FD2)	4.71
80 g purple yam and 40 yellow crookneck pumpkin (FD3)	5.11
Average Score	4.84

Table 4. Results of Duncan's Test on Taste

Formulation	N	Subset for alpha = 0, 05	
		1 (a)	2 (b)
40 g purple yam and 80 g crookneck pumpkin (FD1)	30	4.69 [a]	
60 g purple yam and 60 g crookneck pumpkin (FD2)	30	4.71 [a]	
80 g purple yam and 40 g crookneck pumpkin (FD3)	30		5.11 [b]

For each application, the textures of the purple yam and crookneck pumpkin dodol paste were varying. The texture of dodol made with 40 g of purple yam paste and 80 g of crookneck pumpkin (FD1) is soft; those made with 60 g of purple yam paste and 60 g of crookneck pumpkin (FD2) are slightly chewy; and those made with 80 g of purple yam paste and 40 g of crookneck pumpkin (FD3) is smooth and chewy.

Table 5. Results of Texture Organoleptic Test in Dodol

Dodol	Average
40 g purple yam and 80 g crookneck pumpkin (FD1)	4.41
60 g purple yam and 60 g crookneck pumpkin (FD2)	4.54
80 g purple yam and 40 g crookneck pumpkin (FD3)	4.96
Average Score	4.64

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Table 6. Results of Duncan's Test on Texture

Formulation	N	Subset for alpha = 0, 05	
		1 (a)	2 (b)
40 g purple yam and 80 g crookneck pumpkin (FD1)	30	4.41 [a]	
60 g purple yam and 60 g crookneck pumpkin (FD2)	30	4.54 [a]	
80 g purple yam and 40 g crookneck pumpkin (FD3)	30		4.96 [b]

The findings of the organoleptic aroma test revealed that the panelists' preference for the resulting dodol ranged from 4.62 to 4.98, which means that the panelists' evaluation of the producing dodol ranged from 'slightly like' to 'like.' The inclusion of 40 g of purple yam pastes and 80 g of crookneck pumpkin (FD3) increased the panelists' hate of dodol while increasing their like to the greatest level (FD1). The analysis of variance (ANOVA) results revealed that the addition of purple yam and crookneck pumpkin paste had a significant impact on the dodol scent, with a p-value of less than 0.05.

Table 7. Results of Aroma Organoleptic Test in Dodol

Formulation	Average
40 g purple yam and 80 g crookneck pumpkin (FD1)	4.62
60 g purple yam and 60 g crookneck pumpkin (FD2)	4.63
80 g purple yam and 40 g crookneck pumpkin (FD3)	4.98
Average Score	4.74

Table 8. Results of Duncan's Test on Aroma

Formulation	N	Subset for alpha = 0, 05	
		1 (a)	2 (b)
40 g purple yam and 80 g crookneck pumpkin (FD1)	30	4.62 [a]	
60 g purple yam and 60 g crookneck pumpkin (FD2)	30	4.63 [a]	
80 g purple yam and 40 g crookneck pumpkin (FD3)	30		4.98 [b]

Dodol Chemical Properties

The water content test (%) on dodol with the addition of 40 g purple yam paste and 80 g crookneck pumpkin (FD1) resulted in an average value of 21.43. In the addition of 60 g purple yam paste and 60 g crookneck pumpkin (FD2) treatment, it resulted in an average value of 21.43. The treatment with the addition of 80 g purple yam paste and 40 g crookneck pumpkin (FD3) has the highest average value with a value of 25.44. As a result, the dodol treatment formulations FD1 and FD2 had the lowest water content, and the dodol formulation FD3 had the greatest water content.

Table 9. Results of Water Content Test

Dodol	Average %
40 g purple yam and 80 g crookneck pumpkin (FD1)	21.43
60 g purple yam and 60 g crookneck pumpkin (FD2)	21.43
80 g purple yam and 40 g crookneck pumpkin (FD3)	25.44
Average Score	23.13

The mineral composition, purity, and cleanliness of the final product are revealed by a material's ash content (Andarwulan et al., 2011). The outcomes of the chemical test revealed that the addition of 80 g of purple yam paste and 40 g of crookneck pumpkin (FD3) resulted in the highest average value of ash content (%) of dodol, with a value of 0.91, and the addition of 40 g of purple yam and 80 g crookneck pumpkin (FD1) with ash content value of 0.86 and the addition of 60 g purple yam paste and 60 g crookneck pumpkin (FD2) with valueof 0.90.

Table 10. Results of Ash Content Test

Dodol	Average %
40 g purple yam and 80 g crookneck pumpkin (FD1)	0.86
60 g purple yam and 60 g crookneck pumpkin (FD2)	0.90
80 g purple yam and 40 g crookneck pumpkin (FD3)	0.91
Average Score	0.89

Dodol's fat level is inextricably linked to its use of coconut milk. The addition of 80 g of purple yam paste and 40 g of crookneck pumpkin to dodol (FD3) resulted in the highest fat content (%), with a value of 1.71, followed by the addition of 40 g of purple yam paste and 80 g of crookneck pumpkin (FD1) and 60 g of purple yam paste and 60 g of crookneck pumpkin (FD2), both of which resulted in values of 1.16 and 1.44, respectively.

Table 11. Results of Fat Content Test

Formulation	Average %
40 g purple yam and 80 g crookneck pumpkin (FD1)	1.16
60 g purple yam and 60 g crookneck pumpkin (FD2)	1.44
80 g purple yam and 40 g crookneck pumpkin (FD3)	1.71
Average Score	1.44

Table 12. Results of Duncan's Test on Fat Content

Formulation	N	Subset for alpha = 0, 05	
		1 (a)	2 (b)
40 g purple yam and 80 g crookneck pumpkin (FD1)	30	1.16 [a]	
60 g purple yam and 60 g crookneck pumpkin (FD2)	30	1.44 [a]	1.44[b]
80 g purple yam and 40 g crookneck pumpkin (FD3)	30		1.71 [b]

The analysis of the protein content (%) in dodol produced the following results: the treatment containing 80 g of purple yam paste and 40 g of crookneck pumpkin (FD3) had the highest value, with an average of 2.63, and the treatment containing only yam paste had the lowest value. 40 g of purple and 80 g of crookneck pumpkin (FD1) have a value of 2.13. When the p-value was more than 0.05, the ANOVA results revealed that adding purple yam and crookneck pumpkin paste had no discernible impact on the protein content.

Table 13. Results of Protein Content Test

Dodol	Average %
40 g purple yam and 80 g crookneck pumpkin (FD1)	2.13
60 g purple yam and 60 g crookneck pumpkin (FD2)	2.63
80 g purple yam and 40 g crookneck pumpkin (FD3)	2.69

The treatment with the addition of 40 grams of purple yam paste and 80 grams of crookneck pumpkin (FD1) produced a fiber content of 2.19. Meanwhile, the treatment with the addition of 60 grams of purple yam paste and 60 grams of crookneck pumpkin (FD2) and 80 grams and 40 grams of crookneck pumpkin (FD3) produced a fiber content of 2.27.

Table 14. Results of Fiber Content Test

Formulation	Average %
40 g purple yam and 80 g crookneck pumpkin (FD1)	2.19
60 g purple yam and 60 g crookneck pumpkin (FD2)	2.27
80 g purple yam and 40 g crookneck pumpkin (FD3)	2.27

The treatment with the addition of 80 g purple yam paste and 40 g crookneck pumpkin (FD3) had the highest carbohydrate content (%) in dodol, with an average of 72.17, while the

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treatment with the addition of 40 g of purple yam and 80 g of crookneck pumpkin paste (FD1) had the lowest, with a 66.96 average value.

Table 15. Results of Carbohydrate Content Test

Formulation	Average %
40 g purple yam and 80 g crookneck pumpkin (FD1)	66.96
60 g purple yam and 60 g crookneck pumpkin (FD2)	70.26
80 g purple yam and 40 g crookneck pumpkin (FD3)	72.17

Table 16. Results of Duncan's Test on Carbohydrate Content

Formulation	N	Subset for alpha = 0, 05	
		1 (a)	2 (b)
40 g purple yam and 80 g crookneck pumpkin (FD1)	30	66.96 [a]	
60 g purple yam and 60 g crookneck pumpkin (FD2)	30	70.26[a]	70.26[b]
80 g purple yam and 40 g crookneck pumpkin (FD3)	30		72.17 [b]

Discussion

Characteristics of Dodol Organoleptic

Color

When evaluating the quality or level of consumer acceptance of food products, color is a crucial factor (Wirnano, 2004). One of the things that draws consumers to eat a product is its color. Purple Dodol pasta The hues of yam and crookneck pumpkin vary depending on the treatment. Dodol that has undergone FD1 treatment is brown, FD2 treatment is faded purple, and FD3 treatment is vivid purple.

Analysis of variance (ANOVA) results revealed that the inclusion of purple yam and crookneck pumpkin paste had a significant impact on the color of dodol with a P-value less than 0. 05. Due to the brown color that is generated, dodol that contains 80 g of purple yam paste and 40 g of crookneck pumpkin is preferred over dodol that contains 40 g of purple yam paste and 80 g of crookneck pumpkin.

The increase in the percentage of adding purple yam was associated with an increase in the acceptance and preference of panelists for the color of the dodol because the amount of purple yam added also increased the amount of purple color added to the dodol. It is well known that the natural purple dye anthocyanins are present in purple yam (Poertrina, 2021).

Taste

Both sweet and savory flavors of dodol are developed in each treatment. The addition of sugar creates a sweet flavor by itself, and the starch from coconut milk creates a savory flavor.

The range of the panelists' preferences for the resulting dodol (4.69 to 5.11) indicates that they were generally neutral to favorably impressed with it. The addition of 80 g of purple yam pastes and 40 g of crookneck pumpkin with a characteristic sweetness to dodol goods yielded the maximum value. The panelists' least favorite dodol was the one with the addition of 80 g of crookneck pumpkin and 40 g of purple yam paste.

According to the findings of the analysis of variance (ANOVA), the addition of purple yam and crookneck pumpkin paste had a significant impact on the flavor of dodol with a P-value of 0. 05. The judges agreed that the addition of 80 g of purple yam paste and 40 g of crookneck pumpkin was the most well-liked and favored addition in terms of flavor. The findings of Duncan's experiment revealed that the additions of 40 grams of purple yam paste and 80 grams of crookneck pumpkin as well as the addition of 60 grams of purple yam paste and 60 grams of crookneck pumpkin resulted in the same notation, with an average of 4.69 and 4.71. Meanwhile, the addition of 40 crookneck pumpkin and 80 grams of purple yam paste resulted in a difference

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with an average difference of 5. 11. Thus, it can be inferred that the flavor of dodol is affected by the inclusion of purple yam paste and crookneck pumpkin.

This is so that a sweeter, savory, and more unique flavor can be obtained by adding additional purple yam paste and crookneck pumpkin. The components of the other substances employed are also related to the sweet and distinct flavor, Saroinsong et al. (2015).

Texture

For each application, the texture of the purple yam and crookneck pumpkin dodol paste was varied. The texture of dodol made with 40 g of purple yam paste and 80 g of crookneck pumpkin (FD1) is soft; that of dodol made with 60 g of purple yam paste and 60 g of crookneck pumpkin (FD2) is slightly chewy; and that of dodol made with 80 g of purple yam paste and 40 g of crookneck pumpkin (FD3) is smooth and chewy.

According to the findings of Duncan's test, the panelists preferred the texture of dodol made with 80 g of purple yam paste and 40 g of crookneck pumpkin (FD3) over dodol made with 40 g of purple yam paste and 80 g of crookneck pumpkin (FD1) and 60 g of purple yam paste and 60 g of crookneck pumpkin (FD2). Therefore, it can be said that the texture of dodol was significantly impacted by the addition of purple yam and crookneck pumpkin paste.

The inclusion of crookneck pumpkin pastes increased panelists' approval of and liking for the texture of the dodol, and the more amounts of crookneck pumpkin paste the dodol created, the less elastic it was. In this experiment, the elasticity of the dodol was evaluated by observing whether the crookneck pumpkin dodol remained sticky in the palm and after chewing (Hanggara et al., 2016).

Scent

For each treatment, the scent of the purple yam and crookneck pumpkin dodol paste was distinct. In order for panelists to accurately assess the dodol fragrance and make it easy for them to distinguish between treatments.

The findings of the organoleptic aroma test revealed that the panelists' preference for the resultant dodol ranged from 4.62 to 4.98, which means that the panelists' evaluation of the producing dodol ranged from slightly like to like. The inclusion of 40 g of purple yam pastes and 80 g of crookneck pumpkin (FD3) increased the panelists' hate of dodol while increasing their like to the greatest level (FD1). The analysis of variance (ANOVA) results revealed that the addition of purple yam and crookneck pumpkin paste had a significant impact on the dodol scent with a p-value of less than 0. 05.

The results of Duncan's test indicated that the addition of 40 grams of purple yam paste and 80 grams of crookneck pumpkin (FD1) and the addition of 60 grams of purple yam paste and 60 grams of crookneck pumpkin (FD2) were the same, namely, in the same notation, with an average of 4.62 and 4.63. Meanwhile, the addition of 80 grams of purple yam pastes and 40 grams of crookneck pumpkin (FD3) demonstrated a difference with an average value of 4.98, leading to the conclusion that the addition of purple yam. Therefore, it can be said that the FD3 treatment was the one that the panelists preferred the most in terms of scent out of the three treatments. Because the savory scent and characteristic dodol aroma are more potent in FD3, it is favored over FD1 and FD2.

Even though each treatment differs, the aroma produced on dodol with the addition of purple yam paste and crookneck pumpkin is not significantly different. The perfume of the dodol is still the same as the aroma of dodol generally, but the crookneck pumpkin and purple yam paste also give off a distinct, disagreeable aroma. Nevertheless, it is believed that this absence of scent is caused by the creation of new chemicals as a result of the stirring action over the fire (Winarno, 1992).

Dodol Chemical Properties

Water Content of Dodol

The analysis of variance (ANOVA) results on dodol showed that the addition of purple yam and crookneck pumpkin paste had no discernible impact on the dodol's water content, with a significant level value with P-value > 0. 05. Due to the lack of pectin in purple yam and

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crookneck pumpkin, which may bind water, the average value of water content rises the more purple yam and crookneck pumpkin paste is added (Hanggara, 2016).

Despite the standard SNI 01 - 2986 - 1992 requirements for a maximum water content of 20% in dodol products, the dodol produced in this study still had a high-water content. Then, in line with SNI, it requires a longer cooking period to create the highest water content. The addition of purple yam and crookneck pumpkin, both of which have a high-water content due to the steaming process, also contributes to the increase in water content in dodol (Hanggara, 2016).

Ash Content of Dodol

With a P-value > 0. 05, the analysis of variance (ANOVA) results revealed that the addition of purple yam and crookneck pumpkin paste had no discernible impact on the ash content. In comparison to the SNI standard 01-2986-1992, which requires that the dodol ash content be at least 1. 5%, the dodol produced in this study had the lowest ash concentration, ranging from 0. 86 to 0. 91.

Ash content reveals the mineral content of food, which makes it a key indicator of an ingredient's nutritional worth and purity (Juita, 2019). The amount of ash content also influences the addition of raw materials to each of the dodol formulations used, such as the use of wheat, rice, and tapioca flour, each of which has a unique composition that may include small amounts of calcium, magnesium, sodium, fluorine, phosphorus, and other elements (Murtiningrum et al., 2011).

Fat Content of Dodol

The rancidity process may proceed more quickly in dodol due to its high fat content. In addition to helping to dissolve glutinous rice flour and sugar during the preparation of dodol, coconut milk also plays a crucial function in producing fat, giving the dish its delectable flavor and silky texture (Lukito et al., 2017).

The findings of the analysis of variance (ANOVA) revealed that the inclusion of purple yam and crookneck pumpkin paste had a significant impact on the fat content, with a P-value less than 0. 05. Dodol must have a minimum fat content of 7% according to Standard SNI 01 - 2986 - 1992, although the dodol used in this study had a lower fat content than that requirement. This is because, in addition to glutinous rice flour, coconut milk starch, and sugar, basic components such as purple yam and crookneck pumpkin are used, each of which has a fat content of only 0.30 g.

Protein Content of Dodol

The dodol produced in this study had a lower protein content than required by Standard SNI 01-2986- 1992, which specifies that the dodol must have a minimum protein level of 3%. Due to the inclusion of purple yam and crookneck pumpkin in addition to glutinous rice flour, coconut milk starch, and sugar as basic ingredients, the protein content of dodol made is lower than SNI 01-2986-1992.

Fiber Content of Dodol

When the P-value was more than 0. 05, the results of the analysis of variance (ANOVA) revealed that the addition of purple yam and crookneck pumpkin paste had no discernible impact on the fiber content. Although fiber content is not included by SNI dodol No. 01-2968-1992's standards, an analysis of fiber content is nonetheless done to determine how the usage of food items in dodol impacts fiber content.

Carbohydrate Content of Dodol

Analysis of variance (ANOVA) findings revealed that the inclusion of purple yam and crookneck pumpkin paste had a significant impact on the amount of carbohydrates, with a p-value less than 0. 05. According to the findings of Duncan's test, the treatment including 80 g of purple yam paste and 40 g of crookneck pumpkin (FD3) had the greatest value, averaging 72. 17, while the treatment containing 40 g of purple yam paste and 80 g of crookneck pumpkin (FD1)

had the lowest value. the treatment with the addition of 60 g purple yam paste and 60 g crookneck pumpkin (FD2), with an average value of 70. 26, is in the same notation as the therapy with an average value of 66. 96. (FD1).

This is possible because the amount of carbohydrates in the raw ingredients influences the amount of carbohydrates in the finished dodol. The primary sources of carbohydrates in this study were purple yam and crookneck pumpkin, with purple yam having a carbohydrate content of 81. 6 to 87. 6 and crookneck pumpkin having a carbohydrate content of 12 to 24 g. Granulated sugar is another type of chemical compound that belongs to the carbohydrate group; it has a sweet flavor and is soluble in water (Malawat, 2013).

Conclusion

The flavor, aroma, texture, and color of dodol were significantly impacted by the substitution of purple yam and crookneck pumpkin paste. (p-value < 0. 05). According to the average of Duncan's test findings, FD3 with 80 g of purple sweet potato and 80 g of crookneck pumpkin was preferable in terms of color, taste, scent, and texture over dodol treated with FD1 and FD2. The amount of fat and carbohydrates in dodol were significantly changed by the substitution of purple yam and crookneck pumpkin paste. The water content, ash content, protein content, and fiber content of dodol were unaffected by the substitution of purple yam and crookneck pumpkin paste. According to research on dodol purple yam and crookneck pumpkin paste, dodol's high water content can hasten rancidity and reduce its shelf life. It is advised to make dodol with less water content so that its shelf life will be longer by adding more glutinous rice flour and cooking it for a longer period of time. In order to create a chewy and dense dodol texture, glutinous rice flour can also be included.

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