AREN AS A CONSERVATION PLANT THAT VALUES ECONOMICS IN SOUTH TAPANULI

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ABSTRACT

The condition of palm sugar farmers in almost all regions in South Tapanuli Regency is quite alarming, so the term "if aren farmers do not have social relations". The work done does not recognize the conditions of the day and weather, because if left behind will cause damage to leads and nira which are expected to not drip again. Meanwhile, in addition to sap there is still palm fruit that can be processed into products of economic value. This study uses the laboratory experimental method to determine the nutrient content of palm sugar (kolang kaling), product nutritional content and organoleptic test to determine the level of panelist acceptance of the product produced compared to existing products. Organoleptic analysis opens the likers scale.

Palm fruit (kolang kaling) is processed into fibrous drinks, agar and jam. The results of research conducted by comparing the products produced with the products on the market show that the products from Kolang Kaling are unique, for example, panelists provide high value from taste, and a distinctive aroma because the products are not using preservatives and artificial sweeteners. but using juice as a sweetener for drinks. Likewise with the agar and jam produced, the panelists' responses are generally very positive, especially from the natural side of the product produced. Wider use, for example by establishing small industries in the center of palm sugar plants, will provide economic value to the community and ultimately increase their income.

Key word : Palm tree, Conservation, Kolang Kaling

A. PRELIMINARY

Palm trees have good adaptability to various conditions of land and agro-climate, and high tolerance in mixed cropping patterns, including woody plants, and fast growing because they have many roots and heavy canopy. Because of this plant, it is suitable to be developed on marginal lands which are mostly owned by poor farmers. To overcome the increase in the extent and number of poor land areas in Indonesia at an increasingly high rate, it is needed a type of crop such as sugar palm. This plant produces sap that is feasible to be cultivated with low input and is very suitable for water and soil conservation purposes. In addition, palm trees produce biomass above and in very large soils that play an important role in the CO_2 cycle (Lay dan Helyanto. 2011).

Aren often found in almost all of Indonesia grows naturally in various environmental conditions. Aren spreads from Aceh to Papua with planting areas that are still very small, because there is no seirus cultivation in the development of plants. Palm populations in Indonesia are widely distributed from Aceh to Papua with the largest population in West Java,
followed by Papua, South Sulawesi, North Sulawesi and North Sumatra (Lay dan Helyanto. 2011).

Almost all parts of palm sugar can be used for human needs and have economic value. Palm leaves are commonly used as roofs, cover them for making brooms and pulp, fibers for rope and cleaning tools (brooms, bathroom brushes), the fruit is processed into food ingredients (kolang kaling), male fruit marks are used as sources of sugar, stems are used for the floor house and recently used as a substitute for iron for building poles, sometimes for other types of palm sugar the stem is used instead of water pipes, while the roots are often used as medicinal ingredients. However, generally the new community uses the palm fruit and palm juice that is flavored from male fruit bunches. The use of kolang kaling fruit will be seen during fasting of Ramadan and Eid while palm sugar is used at any time to make brown sugar. Kolang Kaling has a very high nutritional value, which contains fiber, protein, fat, carbohydrates, vitamins and minerals, especially iron (Fe).

Sijungkang Village is one of the villages in the District of Angkola Timur, South Tapanuli Regency, North Sumatra Province, which also has a large amount of palm oil. This palm plant grows naturally and its utilization has not been maximized because the economic value that people get is still low, especially from kolang kaling. Income from kolang klaing is only before fasting and Eid. This study is intended to make kolang kaling available every day and become a source of continuous community income.

B. RESEARCH METHODS

This research is intended to determine the potential of palm sugar as raw material for making drinks and food, and to compare these products with similar products that have been circulating in the community. Kolang Kaling processed products consist of 3 (three), namely drinks, agar and jam, then compared with other products that are taken not to mention the name of the product, manufacturer and characteristics, but similar. Drink products made in categories such as high-fiber drinks generally use nata in ninuman, so that they are also the same which use fiber content as a selling value. However, for jams we use finished which comes from plants such as jam from pineapple, beans, salak, strawberries. Each product was taken in 5 types and then presented to the panelists to be scored on the product, with the parameters of taste, aroma, color and texture, using

sklaa likers. The number of panels of 78 people who were asked randomly around the Faculty of Agriculture UGN Padangsidimpuan campus.

The data obtained is then tabulated and analyzed by calculating the percentage of the number of panelists who like each product presented. The study was conducted in three stages at the University of Graha Nusantara. This first research began by observing people's behavior in processing kolang kaling, namely by dividing the kolang kaling on 3 (three) categories 1. Young (blood term "wine"). 2. Medium (the term "kolang kaling Medan"). And 3. old (The term area "Kolang Kaling Jakarta"). These three categories are then analyzed to determine the physical and chemical conditions of the kolang kaling. Physical condition analysis consists of organoleptic analysis and chemical analysis consisting of analysis of levels of carbohydrates, proteins, fats, vitamins and minerals.

C. RESULTS AND DISCUSSION

Palm fruit used is grouped in 3 (categories), namely young, medium and old. This grouping is intended for different products and this is the result of several trials in previous studies. Kolang Kaling Muda is very suitable for beverage raw materials, is suitable for food in the form of agar and the like while old is suitable for raw materials for making food, such as jams, sweets and so on (Syafiruddin et al, 2017). The results of the analysis for palm fruit with a grouping of young, medium and old can be seen in the following table.

Table 2. Results of analysis of palm fruit with different ages

No	Analysis	Palm Fruit Age used			Unit
		young	**medium**	**old**	
1	Vit. C level	89.91	117.49	162.04	Mg/100g
2	Strach Level	74.58	61.66	53.01	%
3	Coarse Fiber	14.03	11.06	9.74	%
4	Ca	0.24	0.45	0.59	%
5	Fe	0.84	1.88	1.58	Ppm

Source : Syafiruddin, et al (2018)

The resulting product consists of drinks and food, and then compared with similar products. The age of panelists is very influential on the ability to assess the product being tested, therefore the age chosen is between 12-40 years. The selection of this age range is expected to provide the actual percentage of the product being compared, so that the expected results, namely the potential of palm fruit or kolang kaling as raw material for the manufacture of drinks and foods with high nutritional content. Number of panelists based on age range as shown in Figure 1.

Figure 1. Distribution of age of panelists used, total panelists 78 people.

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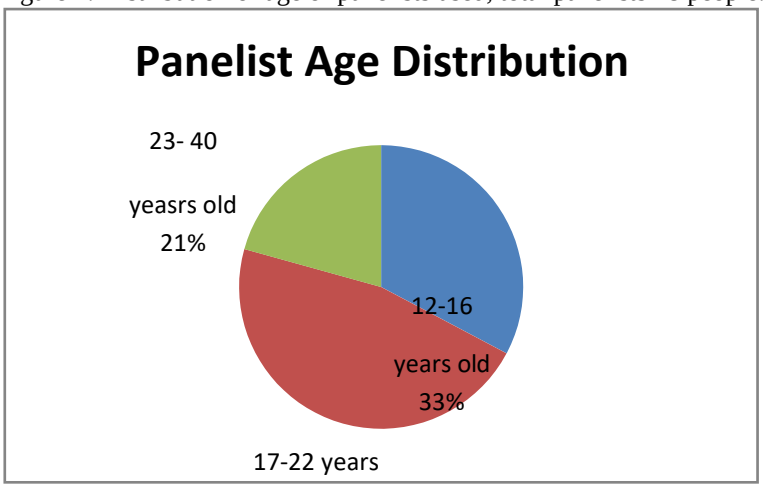

Figure 1. Distribution of age of panelists used, total panelists 78 people.

Testing of the products produced from kolang kaling, drinks, agar and jam compared to similar products circulating in the community shows that the products made from kolang kaling get a place in the community, and this potential should be followed up by the local government, especially the regions with large palm sugar populations, so that there is added value to the product produced. The results of the organoleptic test for the product being compared can be seen in Tables 2 to 7 below

Table 2. The results of organoleptic tests, the number of panelists who said they were very like and liked to drink

The number of panelists who expressed their likes and likes	Product				
	Sample	X1	X2	X3	X4
Colour	12	16	19	16	15
Aroma	21	16	12	14	15
Taste	15	17	18	14	14
Testure	19	15	16	14	14
Percentage (%)	21.47	20.51	20.83	18.59	18.59

Table 3. Percentage of age distribution of panelists to tested beverage products

Panelist age distribution	Product				
	Example	X1	X2	X3	X4
12-16 years old	21.43	18.65	21.04	18.98	19.90
17-22 years old	38.14	15.89	14.87	18.65	12.45
23- 40 years old	19.78	18.24	19.12	15.99	26.87

Table 4. Results of organoleptic tests, the number of panelists who stated very like and like for the agar product

The number of panelists who expressed their likes and likes	Product				
	Sample	X1	X2	X3	X4
Colour	12	16	16	15	19
Aroma	17	15	18	16	12
Taste	22	18	15	13	10
Testure	14	16	18	19	11
Persentase (%)	20.83	20.83	21.47	20.19	16.67

Table 5. Percentage of panelist age distribution for products to be tested

Panelist age distribution	Product				
	Sample	X1	X2	X3	X4
12-16 years old	29.78	18.88	20.75	17.43	13.16
17-22 years old	26.14	19.54	20.16	15.33	18.83
23- 40 years old	19.98	16.98	16.99	20.48	25.57

Table 6. Results of organoleptic tests, the number of panelists who stated very like and like to jam products

The number of panelists who expressed their likes and likes	Product				
	Sample	X1	X2	X3	X4
Colour	15	16	15	13	19
Aroma	14	16	16	17	15
Taste	19	15	17	16	11
Testure	17	13	16	14	18
Persentase (%)	20.83	19.23	20.51	19.23	20.19

Table 7. Age distribution of panelists to the jam products tested

Panelist age distribution	Product				
	Sampel	X1	X2	X3	X4
12-16 years old	17.88	20.56	19.65	18.54	23.37
17-22 years old	28.99	21.67	12.88	16.33	20.13
23- 40 years old	26.78	20.54	14,66	19.45	14.57

Color is a very important component in determining the quality or degree of acceptance of a food product. A food ingredient will be judged to be delicious and attractive texture will not be liked or consumed if the color of the product does not provide attractive ceksan and deviates from the proper color. Determining the quality of a food depends on several factors, but the color factor becomes the main determinant before the food product is consumed. This is reinforced by Winarno's (2004) statement, the color factor will appear first before other factors emerge.

The color of this product is still not favored because in its manufacture it does not use pulverization as the product is circulating in the market. The number of panelists who stated that they liked this processed product was the lowest. However, the natural colors seen on the product also give the panelists a natural value, so the panelists give their choices. The color of the white kolang kaling cream, if given a small amount of color will give a strong impression and has a strong taste, but it can later be done if it has begun to be mass produced. Likewise for aroma parameters. Aroma is the result of steam processing of food, steam is created from food ingredients that are processed, each ingredient has a different aroma. In addition, the method in processing foodstuffs also affects the aroma produced. Aroma is a
certain substance or component that has several functions in food, its essence can be to improve the quality of these food products. Besides that it can also make these food products acceptable, so that the role of aroma can attract consumers to choose the product. Winarno (2004) also stated that aroma testing is important because it can provide an assessment of the product, whether it is acceptable or not.

Like color and aroma, taste is also an important part in assessing a product. Taste is a chemical reaction from a combination of various food ingredients and creates a new taste that is felt by the tongue as the senses taste. Uniformity of taste quality to food is very difficult to determine for sure by every consumer because the taste of every human being has a different perception. it is known that the panelists were quite responsive to these processed kolang kaling products, meaning that the number of panelists did not have much difference compared to products that had already been circulating in the market. There is a rather striking difference in taste, the number of panelists is quite large. This is because the uniqueness of kolang kaling is quite felt and a distinctive feature, while other products generally use nata as an additional ingredient, while this processed product uses young kolang kaling so that it can be destroyed and fused to add the added water. And, to give the uniqueness of this product using kolang kaling which is only sliced so that the presence of kolang kaling in a drink can be seen clearly and gives a natural impression. After three factors that are assessed by panelists, the last factor is the texture of the product produced. Texture is the result or final appearance of the food product produced. At the end of the treatment process will be shown the outer shape, soft or hard, surface conditions, the

state of dry or wet food, and is a certain quality of a surface that arises as a result of 3-dimensional structure. This 3 dimensional structure is also called an element which shows the sense of surface material that is intentionally created and presented in an arrangement to achieve the shape of the food product produced.

Kolang kaling texture, both young, medium and old, is generally smooth, rubbery and fibrous. After being processed into a drink, so that the characteristic jam from kolang kaling is not lost, because in the manufacture of products do not use other ingredients. Product texture that looks natural, supple and soft is the choice of panelists. As with products that have been circulating in the market, the basic thing is to try to make the product look natural and attractive.

The distribution of the number of panelists who chose the tested product was spread evenly at intervals of 18.59 - 21.47 percent for beverage products, 16.17-21.42 percent for agar and 19.23 - 20.83 percent for jam. Among the three products, the biggest interval is in the product so that this is due to the uniqueness of the agar only from seaweed. So that from this kolang kaling has a different texture, different aroma and taste. One way that can be used to increase the agar value from kolang kakling is by mixing the kolang kaling with agar from seaweed.

The age distribution of panelists who chose kolang kaling processed products for drinks was 38.14 percent with the distribution age of 12-1 6 years, so that 29.78 percent in the age range of 17-22 years and the panelist age distribution of 17-22 years was 28.99 percent. This data is also a proof that the product from kolang klaing can be accepted by people with an age range of 12-40 years.

D. CONCLUSION

Utilization of palm or kolang kaling fruit is very good and can be accepted by the community as a raw material for making drinks and food. The number of panelists who expressed their likes and likes for beverage products was 21.47 percent, so that 20.83 percent and jam 20.83 percent and the age distribution of panelists for products produced 12-22 years. The potential of kolang kaling which can be seen from the acceptance of panelists becomes the basic capital to be able to provide added value to kolang kaling so as to increase the income of the community where the palm trees are grown. The economic value of palm sugar cultivation as a conservation plant has economic value and can improve the economy of rural communities.

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