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Organoleptic Test on Lanting Products with the Addition of Tuna Fish Meal

¹ Junianto, ² Santi Amelia, ³ Rif'atus Solihah, ⁴ Inas Maya Tamimah Hanun, ⁵ Mohamad Tantan Permana Hakim, ⁶ David Reivaldo Manuel, ⁷ Devi Indah Pramesti

¹ Lecturer, Department of Fisheries, Padjadjaran University, Indonesia

^{2, 3, 4, 5, 6, 7} Undergraduate Students, Fisheries Study Program, Padjadjaran University, Indonesia

Corresponding Author: **David Reivaldo Manuel**

Abstract

Tuna fish flour is one of the innovations that can be added in the process of making lanting. As for in this case the utilization of waste from tuna, namely in the form of bones, can be used to process into flour. Fishmeal has very high calcium. This study aims to create new innovations in making lanting by adding tuna fish meal which has a high nutritional content. The resulting product is not only ordinary food but has a high nutritional content. In this study, there were 4 concentrations of adding tuna fish meal, namely treatment A 0% (control), treatment B 5% (5 grams), treatment C 7.5% (7.5 grams), and treatment D 10% (10 grams). The data collection method uses a subjective sensory test taken from the results of the panelist's assessment which includes the assessment of the aroma, color, taste, and textures of the lanting. The scales for

measuring the level of preferences is the tuna fish flour hedonic test using very, very dislike, dislike, mediocrity, like, and very like. 15 untrained panelists. The data analysis technique in this study used the Friedman test and was presented in graphical form on each attributes of the panelist's assessment. The results showed that the average value of aroma ranged from 4.2 to 5.53 and descriptively the panelists rated it somewhat disliked to moderate. The average scores for taste ranged from 4.47 to 6.33 and descriptively the panelists rated it somewhat disliked to somewhat like. The average value for color ranged from 5.8 to 6.8 and descriptively the panelists rated its mediocrity to almost likes it. The average value for textures ranged from 5.8 to 6.8 and descriptively the panelists rated its mediocrity to almost likes it.

Keywords: Lanting, Friedman Test, Hedonic Test, Tuna Fish Meals

Introduction

Indonesia is a country known for its ethnic cultural diversity. Each local culture has its own characteristics and the cultural results are different from one another. Starting from the physical form, language, religion, to the things that are applied in life. From an agricultural perspective, Indonesia produced diverse and unique food products that made it a target for foreigners who were willing to sacrifice anything to monopolize Indonesian food production during the medieval colonial era. Sea products are also a high commodity because of their strategic location. Flanked by two oceans, Indonesia's seas have a diverse wealth of flora and fauna (Warawardhana and Maharani 2014) ^[14].

Local culinary is a type of community creativity in processing food ingredients and adding value to traditional culinary culture (Wibawati and Prabhawati 2021). Traditional food or local food is one of the identities of a community group which is very easy to find and easy to recognize. Every region in Indonesia has a culinary wealth that is characteristic or identity of that area (Tyas 2017).

Lanting is one of the traditional snacks typical of Kebumen, one of the districts in Central Java Province - Indonesia. Lanting is made from raw cassava. Additional ingredients used to make lanting include basic spices such as onions, pepper, salt, flavourings, and food coloring used for red lanting. Lanting forms vary, among others; round (ring), and some are in the shape of the figure eight (Puspitasari 2015) ^[8]. Apart from shape, lanting also has various flavors, namely; original, spicy, cheese flavor, also a tastier and tastier roasted corn flavor (Retnowati 2021) ^[9].

To add flavor variants to lanting products, you can add fish meat flour. Fish commodity whose meat can be made into flour is tuna. The addition of tuna fish meal in the production of lanting can also increase its nutritional value, especially protein and fat.

Tuna (*Thunini*) is a well-known source of animal protein, apart from having a high protein nutritional value, and the price is quite affordable. Tuna also contains EPA (*Ecosa pentanoic Acid*) and DHA (*Decosa Hexanoid Acids*) which are beneficial

to the body include increasing the development and volume of the brain, so it is very beneficial for increasing children's intelligence (Mustika *et al.* 2016) [7]. Goal. This research is to determine the appropriate level of addition of tuna meat flour in making lanting to produce the preferred product.

Research Method

The research was conducted at the Fisheries Processing Product Technology Laboratory, Fisheries Study Program, Padjadjaran University, Indonesia. The main raw materials used are cassava and tuna fish meal. Other additional ingredients are tapioca flour, flavoring, hazelnut, salt and garlic. The tools used are *chopper*, knife, skillet, scales, sieve, *rolling pins*, plastic bowl and cutting board. The research method used was experimental with 4 treatments, namely the level of addition of tuna meat meal 0% (without addition, as a control), 5% (5 grams), 7.5% (7.5 grams) and 10% (10 grams). Of the total cassava used in the manufacture of lanting.

The process of making lanting is carried out as follows: cassava is grated and squeezed using a filter cloth. Squeezed cassava is steamed for about 20 minutes. Then weigh the cassava for each treatment as much as 100 grams and then add the tuna fish flour, tapioca flour (50 grams) and also flavoring, salt, mashed muncang. The first treatment was not added tuna fish meal or 0%, as a control, in the second treatment tuna fish flour was added as much as 5%, in the third treatment as much as 7.5% and in the fourth treatment as much as 10%, then the lanting mixture was stirred until smooth, after the dough was smooth put in a plastic zipper and flattened using *rolling pin*, then cut the dough using a knife and shape it into a figure eight, then fry the lanting dough in cold oil until the color turns golden yellow.

Observation variables were carried out on the level of preference for aroma, taste, color and texture of lanting. Testing the level of liking is done by hedonic test with the following scale: really dislike (1), dislike (3), neutral (5), like (7), and really like (9). The panelists used were semi-trained panelists of 15 people. Data obtained from the results of organoleptic testing of lanting from various treatments of the level of addition of tuna meat meal were analyzed descriptively comparatively.

Results and Discussion

Aroma

Aroma is one of the main factors in determining the delicacy of food. Aroma is one of the main attractions in a food product (Asikin and Kusumaningrum 2016) [2]. Aroma is a sensory attribute that can describe the taste of a product even though it has not been consumed. In addition, aroma can determine the composition of the ingredients used (Wiyono *et al.* 2019).

The results of the organoleptic test on the aroma showed that the average value given by the panelists to the aroma of lanting added with tuna fish meal had a value ranging from 4.2 to 5.53 and descriptively the panelists rated it rather dislike to mediocre/neutral. The organoleptic results showed that the more concentration of the addition of tuna fish meal in the production of lanting, the higher the aroma content of the lanting. This is in accordance with the statement of Maulida (2005) [6] which states that the higher the concentration level of the addition of tuna fish meal, the aroma content in the product will increase. The lanting aroma that the panelists liked was lanting with treatment D,

namely the addition of 10% tuna fish meal with an average value of 5.53. Descriptively, the panelists stated that the lanting in treatment D (10%) had a distinctive and balanced aroma between the lanting mixture and tuna fish. Meanwhile, the lanting aroma that had the lowest level of preference was found in treatment C, namely the addition of 7.5% tuna fish meal. Descriptively, the panelists stated that the aroma produced in lanting tasted fishy and was stronger than treatment D (10%). In addition, the aroma of lanting treatment D was preferred over treatment C because the aroma of tuna fish was disguised because the frying process for treatment D took longer than treatment C. This caused the aroma of lanting treatment C to be more fishy and stronger than treatment D.

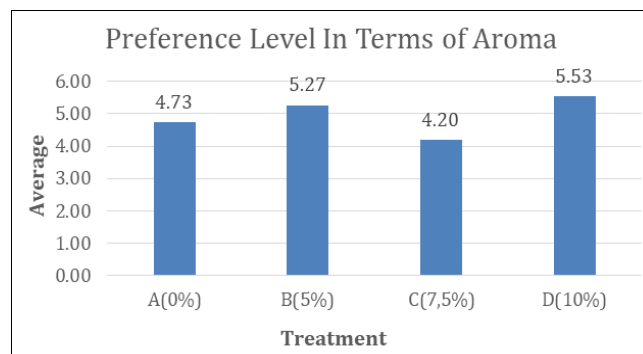


Fig 1: The histogram of the preference test for the aroma of lanting fortified with tuna fish meal

Taste

Taste is one of the main factors in determining the delicacy of food. Taste is a determining factor for the attractiveness of a food product being accepted by consumers. Even though a food product has good nutritional value but the taste is unacceptable, the target of improving community nutrition cannot be achieved (Rifqi *et al.* 2019).

The results of the organoleptic test for taste showed that the average score given by the panelists for the taste of lanting added with tuna fish meal ranged from 4.47 to 6.33 and descriptively the panelists rated it from slightly dislike to almost like it. Based on the organoleptic test, the addition of tuna fish meal has a significant effect on the taste of the product. According to Aryani and Norhayani (2011) [1] the components that make up the taste of food are related to the protein in the food, the more protein it contains, the tastier the resulting product will taste.

The lanting flavor that the panelists liked was lanting in treatment B, namely the addition of 5% tuna fish meal with an average value of 6.07. Descriptively, the panelists stated that lanting has a savory and distinctive taste due to the addition of tuna fish flour. According to Wardani *et al.* (2012) [15], the addition of 5% tuna flour has a distinctive taste of tuna which is not too strong. Meanwhile, the lowest level of preference was found in treatment C, namely the addition of 7.5% tuna fish meal with an average value of 4.47. According to Maulida (2005) [6], the higher the concentration of the addition of tuna flour, the lower the preference level of the panelists for the taste of the food product which is assessed because the taste of tuna dominates. Panelists who tend to dislike the taste can be caused by the habit of the panelists who are not used to consuming lanting or tuna fish so that it tastes strange.

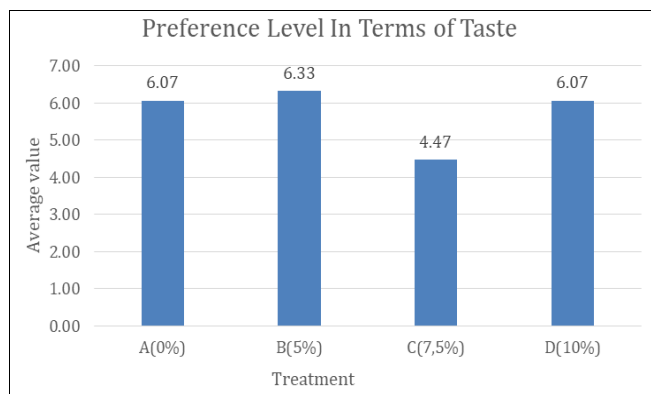


Fig 2: Histogram of the preference test for lanting taste fortified with tuna fish meal

Color

Color is the first parameter for acceptance of a food product. Attractive colors will appeal to consumers to consume these food products (Mansyur 2022). The results of the organoleptic test on the color of the lanting showed that the average value given by the panelists on the taste of lanting added with tuna fish meal had a value ranging from 5.8 to 6.8 and descriptively the panelists were mediocre to almost like it. The highest level of preference for lanting color was found in treatment A (0%) and treatment B (5%) with the same score of 6.8 and the lowest preference was found in treatment D (10%), with an average value of 5.8. (Fig 3)

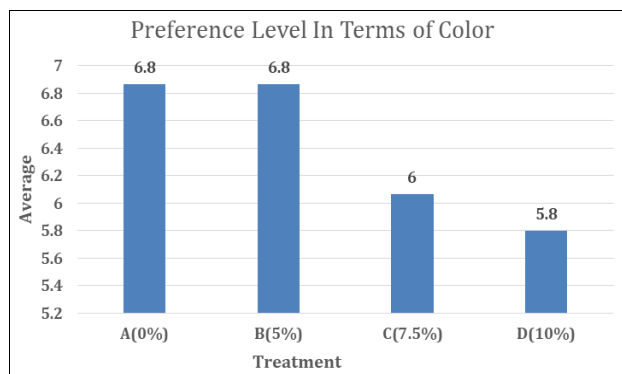


Fig 3: Histogram of the preference test for lanting color fortified with tuna fish meal

On the histogram at for the highest level of preference found in treatment A (0%) and treatment B (5%) with the same score of 6.8 and the lowest level of preference is in treatment D (10%) that is equal to 5.8. A treatment (0%) and B (5%) got the highest score because the color in this treatment was the same as the lanting, in general it was brownish yellow, the average panelist liked treatment A (0%) and B (5%).

The most disliked appearance in treatment D (10%) was dark brown, this was due to the higher concentration of the addition of tuna fish meal used. In addition, it is caused by the frying process. This is reinforced by the statement of Sipayung *et al.* (2015)^[11], stated that the effect of heating on products added to fish meat can cause physical and chemical changes. Browning occurs due to reactions between proteins, peptides and amino acids with the decomposition of fat.

Texture

Texture is one of the most important determining factors in

the quality of lanting products. Texture is influenced by many factors, one of which is the interaction between smoke and food components (Indiarto *et al.* 2012)^[4]. Texture is included in the respondent's assessment. Good lanting when bitten is not soft, not too hard and maintains the density of the material used.

The results of the organoleptic test on the lanting texture showed that the average value given by the panelists to the lanting texture added with tuna fish meal had a value ranging from 5.8 to 6.8 and descriptively the panelists rated it as mediocre/neutral to almost like. The highest level of preference for lanting texture is found in treatment D (10%) with a value of 5.8 and the lowest preference is found in treatment (10%) and treatment C (7.5%) with the same value that is equal to 4.3. (Fig 4).

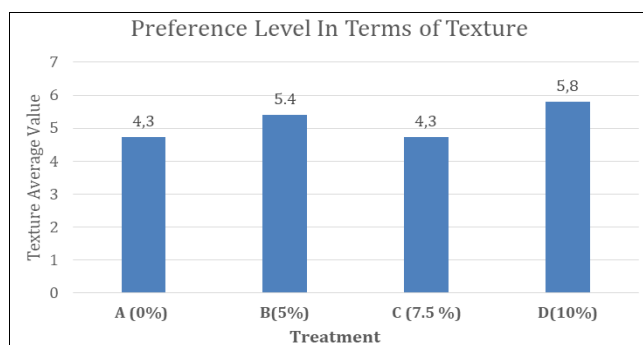


Fig 4: Histogram of the preference test for the texture of lanting fortified with tuna fish meal

In Fig 4, the highest score for texture assessment was obtained, namely in treatment D (10%) with an average value of 5.8. This shows that this treatment has a crunchy texture. The lowest value is in treatment A (0%) and C (7.5%) which is balanced with a value of 4.3. Panelists like the texture of the lanting, which is hard, tends to be crunchy and doesn't crumble easily. The hard texture produced by lanting is thought to be due to the addition of a lot of fish meal. In Rizki and Gz's research (2013) stated that the greater the amount of fish meal added, the level of hardness of the product added fish meal tends to increase. In addition, the texture of the lanting is getting crispier and not easily crushed due to the addition of tapioca flour which acts as a binder to other ingredients which can produce a compact texture thereby reducing brittleness (Lestari *et al* 2013)^[5].

Conclusions and Recommendations

Conclusion

The results showed that the average value of aroma ranged from 4.2 to 5.53 and descriptively the panelists rated it somewhat disliked to moderate. The average score for taste ranged from 4.47 to 6.33 and descriptively the panelists rated it slightly disliked to almost like it. The average value of color ranged from 5.8 to 6.8 and descriptively the panelists rated it as mediocre to almost like it. The average value for texture ranged from 5.8 to 6.8 and descriptively the panelists rated it as mediocre to almost like it. The value of the preference level for lanting tuna fish flour on the aroma attribute is that treatment D has the highest average preference value of 5.53. The level of preference for taste in treatment B has the highest average value of 11.88. The level of color preference in treatment A and treatment B has the highest average of 6.8. The level of texture preference in treatment D has the highest average of 5.8.

Suggestion

Further research needs to be carried out to find sufficient concentrations to produce aroma, taste, color and texture so that lanting can be liked.

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