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Oyster-Based Amplang from Lajari, Barru Regency

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Abstract

This research aims to find out how to make oyster-based amplang taken directly in Lajari, Barru Regency. The abundance of marine natural resources, without oyster cultivation, can breed naturally, so that there is a culinary tour of grilled oysters in Lajari, Barru Regency. The very little utilization of oysters that are only grilled makes this research utilize oysters as a substitute for the main ingredient in making amplang, Oysters were chosen as a substitute for fish in making amplang in the hope of providing product variations and increasing the added value of local marine products. This research used an experimental approach. Data was collected through observation and documentation of the amplang making process as well as organoleptic tests to assess the quality of the final product. The results showed that the use of oysters as the main ingredient in making amplang resulted in a product with unique texture and flavor but less than optimal. In addition, this study also emphasized the importance of maintaining consistency in the manufacturing method to ensure optimal product quality. Thus, this research contributes to the diversification of marine resource-based culinary products in Barru Regency and opens up new opportunities for the development of the local food industry. It is hoped that the results of this study can encourage further innovation in the utilization of oysters and support the economic development of the community.

Keywords: Oyster, amplang, Barru regency

1. INTRODUCTION

Oysters are a type of marine animal that belongs to the shellfish group, characterized by having a hard shell and no spine. Oysters belong to the bivalves group, part of the mollusc phylum, which lives in salty waters and often attaches to hard substrates such as rocks, wood, or mangrove roots in marine areas or river estuaries. The presence of oysters in these aquatic environments is not only important for coastal ecosystems, but also as a commodity of high economic value, especially in the culinary and food sectors.Oysters are known to have hard and irregular shells, where the bottom is shaped like a bowl, while the top is flatter. Oyster meat is very soft and contains high moisture content, which makes it one of the most popular seafood. In addition, oysters are a rich source of animal protein with essential unsaturated fatty acids, minerals, and other nutrients required by the human body, increasing their demand in the market (Gisslen, 2011).

Commercially, there are two main types of oysters that are commonly cultivated: Crassostrea, which has a goblet-like shell shape, and Ostrea, which has a flat shell. Both types of oysters belong to the Ostreidae family, which means they are both edible. However, despite the growing demand for oysters, the availability of oysters is still highly dependent on natural catches, particularly in estuarine and coastal areas. Therefore, the development of more efficient oyster farming techniques is crucial to maintain the sustainability of this resource and overcome challenges such as slow growth and high mortality rates (Meglitsch, 1972; Acta Aquatica, 2016).

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Barru Regency has rich natural resources, especially in the marine and fisheries sectors. One area in Barru Regency that stands out in terms of culinary tourism is Lajari Village. This village is widely known for its delicious and unique grilled oysters. The grilled oyster culinary in Lajari Village not only attracts tourists because of its distinctive taste, but is also a major source of income for local residents. Amidst limited employment opportunities, this culinary venture provides significant economic opportunities for villagers, helping them to improve their standard of living. This huge potential in the marine and fisheries sector provides an opportunity for Barru Regency to develop the local economy through product innovation and diversification. Research into the use of oysters as the main ingredient in the manufacture of amplang is one example of an effort to optimally utilize local natural resources.

Barru Regency can not only increase the competitiveness of local products in a wider market but also provide sustainable economic benefits for its people. The natural wealth and fishery potential possessed by Barru District, coupled with the local community's expertise in processing and presenting culinary products, makes this area one of the centers for the development of the seafood industry in South Sulawesi. Oysters, as part of the Mollusk family, have great potential as an alternative raw material in the manufacture of amplang. Previously, Amplang, an East Kalimantan specialty, mainly made from belida and mackerel fish, has been a popular processed product among the public. Known for its savory taste and tangy aroma, amplang is often used as a souvenir from this region. However, due to the high price of eel and mackerel, many producers have switched to using other more affordable fish, although this affects the quality of the product. Amplang, which has been produced since the 1970s, originally used flatfish or belida. Its production then expanded to various parts of Borneo and Malaysia. Its unique shape, like a tiger's hoof or a small oval, and crunchy texture make amplang a favorite of many people and a snack that is hard to resist. Therefore, this study aims to explore the potential use of oysters in amplang making, focusing on Lajari Village in Barru Regency. Based on the background discussed, the researcher raised a study entitled "Oyster Based Amplang from Lajari Village, Barru Regency."

2. RESEARCH METHODOLOGY

The type of research used is a qualitative method with an experimental approach. This research was conducted at Lajari Barru Regency in May-July 2024. The data collection techniques used were observation and documentation. The data analysis technique used is qualitative descriptive method that utilizes qualitative data that is described in detail and in detail. This analysis is often applied in social research to understand events, phenomena, or certain situations. The qualitative descriptive approach focuses on fact-based problems obtained through observation, experimental tests, and documentation.

2.1 Experiment

Experimentation is a treatment that is deliberately carried out by the researcher on the object of his research in order to find out what the results of the study are. Researchers will record product conditions during the ongoing experimental process.

a. Documentation

The documentation method is a process, technique or method used in collecting data used to find things in the form of records, regulations and so on.

b. Observation

Data collection techniques are carried out through observations accompanied by detailed recording of the condition or behavior of the object being targeted. This observation aims to provide an in-depth description or to test theories and hypotheses, which are carried out in a systematic and planned manner. To facilitate data collection and analysis, the observation table format and the observation table format are used.

Example of observation table format:

"Oyster based Amplang from Lajari Village, Barru Regency"

a. Identity of the Research Object Trial number:

Experiment table:						
b. Aspects Observed						
Sample Observation Table Format						
Table 1. Observation Table						
No	Observed Aspects	Desription				
1.	Taste quality					
2.	Aroma quality					
3.	Texture quality					
4.	Color quality					

Sumber: Authors, 2024

3. FINDINGS AND DISCUSSION

3.1 Standard Recipe of Amplang

Amplang recipes from various research sources, journals. In order to produce a product that has good characteristics based on aspects of texture, taste, aroma and color, of course, requires a recipe that is in accordance with the desired standard. Therefore, researchers have determined the standard recipe for shredded smoked tuing-tuing fish as follows:

Table 2. Recipe					
No	Ingrediets	Quantity			
1.	Oysters	100 gr			
2.	Tapaioka flour	300 gr			
3.	Egg	1 pcs			
4.	Garlic	5 gr			
5.	Sugar	15 gr			
6.	Baking soda	5 gr			
7.	Flavoring	5 gr			
8.	Cooking oil	1 liter			

Source: Authors, 2024

a. Experiment Preparation of Oyster based Amplang

It is the first step taken to start the experiment with the aim of starting the experiment in order to facilitate and facilitate the implementation of the experiment, namely preparing materials, weighing materials and preparing tools.

a. Prepare the ingredients

The purpose of preparing materials is that during the experiment, the required oyster-based amplang is already available. The materials prepared in the amplang making experiment are; oysters, tapioca flour, garlic, eggs, salt, sugar, baking soda, flavoring, and cooking oil.

b. Scale The Ingredients

The ingredients are weighed precisely to produce maximum results because the process of weighing ingredients affects the final result of the amplang product.

c. Tool Preparation

The preparation of this tool aims to facilitate the experimental process of making oyster-based amplang. Important equipment needed in making amplang must be clean, functional and feasible. The equipment that needs to be prepared are:

Table 3. 1001s				
No	Tools	Function		
1. 2.	Stove Scales	For boiling oysters and frying amplang. To weigh the ingredients.		

3.	Blender	To mash oysters/		
4.	Cutting Board	As a tool for chopping garlic.		
5	Bowl	As a container for storing ingredients		
6.	Rolling pin	To shape the dough.		
7.	Frying pan	To fry the amplang.		
8.	Knife	To mash the garlic.		
9.	Stock pot	For boiling oysters		
10.	Hand mixer	As a tool for mixing ingredients.		
Source: Authors, 2024				

b. Experimentation and Documentation Proces

Oysters are one of the most important marine commodities in the Lajari region, with roasting as a traditional processing technique that has been passed down for generations. Oyster roasting in Lajari is not only part of the region's culinary identity, but also gives it a distinctive flavor that is different from oysters from other regions. The roasting process involves the direct burning of the oyster shells, which in turn produces oyster meat with a soft texture. However, this process also poses significant challenges, especially when it comes to opening the oyster shells. The burnt shells require additional treatment, such as beating, in order to be opened, which often results in damage to the oyster meat.

This research focuses on the alternative method of boiling as a way to process oysters. The boiling method was chosen based on its potential ease in opening the oyster shells without the need to use additional labor. The research found that boiling allows the oyster shell to open on its own during the cooking process, minimizing the risk of damage to the oyster meat. In addition, boiling also retains the tenderness of the oyster meat, similar to the results obtained from the roasting method.

However, the boiling method also has drawbacks that need to be considered. One of them is the increased moisture content in the boiled oyster meat, which may affect the texture and flavor quality of the oysters. Nonetheless, the boiling method offers advantages in terms of efficiency and ease of process, making it an attractive alternative to the traditional roasting method. This study provides important insights into the comparison between the shucking and boiling methods of oyster processing in Lajari.

The experimental process in making oyster-based amplang involves several stages that are meticulously done to produce quality amplang. First, the oysters are boiled until their shells open on their own. This boiling is important to soften the shell and ensure that the oyster meat is cooked and easy to separate. After that, the oyster meat is carefully separated from the shell to avoid damage. Next, the oyster meat is mashed until it reaches the desired consistency. At the next stage, the eggs are beaten using a mixer until fluffy. This egg beating aims to give a lighter texture to the amplang dough. Then, the other ingredients are mixed with the oyster meat and eggs that have been beaten. The dough is kneaded until it is evenly mixed and has a texture suitable for shaping. After that, the dough is shaped to resemble amplang in general. This shaping process is important to ensure the amplang has a uniform size and shape. Finally, the molded amplang is fried until cooked and golden in color. Frying is done carefully to ensure that the amplang is cooked evenly and has a crispy texture. a.Collection of materials

The researcher directly collected the necessary materials from the research site in Barru Regency. The oysters used in this study were obtained directly from local oyster sellers in the region. Care was taken to ensure that the oysters were fresh and of high quality, in line with the research needs. b.Oyster boiling

In this study, 1 kg of oysters were boiled for 30 minutes. The boiling process is important to facilitate the separation of the oyster meat from the shell. Boiling for 30 minutes aims to soften the shell and ripen the oyster meat, as well as kill bacteria and microorganisms that may be present. This method is simple and commonly used to open the oyster shells. Boiling helps to make the process of

separating the meat from the shell easier and more efficient, and reduces the risk of injury from hard shells.

c.Separation of oyster meat

Once the boiling process is complete, the next step is to separate the oyster meat from the shell. Boiling has softened the shell, making it easier to separate the oyster meat without damaging it. This separation is important as oyster shells are not used in the making of amplang. This process is done carefully to ensure that the oyster meat remains intact and is not contaminated by shell fragments. Choosing the right time in separating the oyster meat is very important because the boiled oyster meat must be processed immediately to avoid damage or spoilage. Therefore, this separation process must be done immediately after boiling is complete. The result of this separation is clean oyster meat that is ready for the next stage of processing.

d.Mashing the oyster meat

After the process of separating the oyster meat from the shell, the next step is to smooth the oyster meat to ensure the right consistency in the amplang dough. The separated oyster meat is put into a food processor or blender, then processed until it reaches a smooth and uniform texture. This smoothing process is important to ensure that the oyster meat can be well mixed into the dough, giving the amplang an even flavor and texture. The fining of the oyster meat should be done thoroughly to avoid any large chunks that may affect the final quality of the product. Once the oyster meat has reached the desired consistency, it is ready to be mixed with the other ingredients in the amplang dough. This stage ensures that the oyster flavor is evenly mixed in each part of the amplang. e.Egg beating

This process takes between 3 to 5 minutes to process the eggs and baking soda until they reach the right consistency. The first step is to mix the eggs with baking soda evenly. This mixture is then whipped using a mixer at high speed until it reaches the desired stiffness. Once the egg and baking soda mixture reaches a stiff consistency, granulated sugar is gradually added to the batter. This process is continued by beating the batter again using a mixer until the granulated sugar is fully dissolved. It is important to ensure that the granulated sugar is fully dissolved for the batter to have an even flavor and optimal texture in the making of amplang.

f.Mixing of ingredients

The oyster meat that has been separated from its shell is mixed with eggs that have been beaten until stiff, crushed garlic, and flavoring to taste. All these ingredients are mixed thoroughly using a mixer. Once the ingredients are well mixed, tapicca flour is added to the dough, and mixing continues until evenly distributed. The dough is then kneaded to ensure a consistent texture and even mixing of the ingredients. After the kneading process, the dough is allowed to rest for 15 minutes to allow for even absorption of moisture and seasonings and improve the consistency of the dough before the forming and frying stage of the amplang.

Shaping the dough

After resting for 15 minutes, the amplang dough is flattened using a rolling pin until it reaches a uniform thickness. This process is important to ensure the consistency of the amplang texture. Next, the flattened dough is cut to the desired amplang shape with the right cutting tools. Ensuring uniform size and shape of the pieces is essential to obtain amplang with consistent appearance and quality. h. Frying

After the dough is flattened and shaped according to the general amplang shape, the next step is frying. Amplang dough is then fried in oil that has been heated. Frying is done over low heat to ensure that the amplang is cooked evenly. The frying process takes 15 to 30 minutes, depending on the thickness and size of the amplang. During the frying process, it is important to monitor the color of the amplang periodically. Amplang is considered cooked and ready to be removed from the oil when its color starts to turn brownish or golden brown. This color indicates that the amplang has reached the ideal level of doneness with a crispy texture. The use of low heat and careful color monitoring helps prevent the amplang from becoming too dark or burnt.

- c. Characteristics of Final Results
- a. Color Indicator

This study refers to SNI 7762: 2013, from the sensory assessment sheet of fish amplang there are 5 aspects of assessment of color, namely moldy, dull or dirty color, dull or less clean color, evenly bright color, and evenly bright color specific to fish products or clean. Of these 5 aspects, the observation results obtained by researchers from oyster amplang produce a dull or less clean color because the original oyster color is gray or butek. The effect of variations in the amount of tapioca flour and the method of mixing eggs in amplang dough on color and texture. The results showed significant variations in color: brownish white in the first experiment, grayish white in the second experiment, and brown in the third experiment, which was related to the different amounts of tapioca flour and egg mixing techniques. In the second experiment, the reduction of tapioca flour resulted in amplang colors that were close to the original color although the texture was different, while the third experiment showed colors that were not identical but the taste and aroma still resembled traditional amplang. This research opens up opportunities for the development of amplang recipes with desired color and texture characteristics. Amplang, a typical South Kalimantan snack, is known for its crunchy texture and savory taste. The making of amplang involves mixing tapioca flour, eggs, spices and water to produce a deep-fried dough. Variations in the amount of tapioca flour and egg mixing method affect the color and texture of amplang. This study aims to examine the effect of these variations on the color and texture of amplang. This study used an experimental design with three experiments, each using a dough formula that differed in the variation of the amount of tapioca flour and egg mixing method. The dough was fried under the same conditions, and changes in color and texture were assessed organoleptically.

The first experiment resulted in brownish white amplang, presumably due to the use of a lot of tapioca flour, making the dough thicker and difficult to mix perfectly with eggs. The second experiment with reduced tapioca flour resulted in a grayish white color and a crispier texture. The reduction of tapioca flour allowed the dough to mix better with the egg, resulting in a lighter color. The third experiment produced a brown color, possibly due to the use of fewer eggs, although the color was different, the taste and aroma still resembled amplang. This study shows that variations in the amount of tapioca flour and egg mixing method have a significant influence on the color and texture of amplang. The reduction of tapioca flour and better egg mixing resulted in amplang with lighter color and texture characteristics. This research can be further developed by analyzing other factors that affect the color and texture of the amplang, such as the type of tapioca flour, type of egg, and length of mixing. More comprehensive organoleptic tests are needed to assess the taste, aroma, and te new amplang recipes can be developed based on the results of this study.

b. Taste Indikatoor

This research explores the influence of tapioca flour quantity and oyster ratio on the taste of amplang. The results show significant taste differences between formulas 1, 2, and 3. Formula 1, with the highest amount of tapioca flour, produced a taste distinct from typical amplang, while formula 3, with the least amount of tapioca flour, resulted in a flavor very similar to traditional amplang. This indicates that tapioca flour significantly affects the taste of amplang, while the amount of oyster used does not show a notable influence.

The taste of amplang comes from a combination of ingredients such as oyster meat, tapioca flour, garlic, sugar, and seasonings, though the proportions of these ingredients can affect the final flavor. This study aims to analyze the influence of tapioca flour quantity and oyster ratio on the taste of amplang. In the sensory evaluation outlined in SNI 7762:2013 for fish amplang, there are five aspects of assessment: bitterness, blandness, no specific fish flavor, mild fish flavor, and strong fish flavor. The results of the oyster amplang taste observation indicate a strong oyster-specific flavor.

The research employed an experimental design with three dough formulas, each having different proportions of tapioca flour and oyster. The dough was then fried, and the resulting amplang taste was observed. The taste differences between formulas 1, 2, and 3 were significant. Formula 1, with the most tapioca flour, produced a different taste due to the overwhelming presence of tapioca. Formula 3, with the least tapioca flour, resulted in a taste very similar to traditional amplang, as the reduction of tapioca allowed other ingredients' flavors to come through. These differences show that

tapioca flour greatly influences the taste of amplang, while the amount of oyster is not significant because its savory flavor is masked by tapioca in formulas 1 and 2.

This study demonstrates that tapioca flour has a significant effect on amplang's taste, whereas the amount of oyster is not a key factor. Excessive use of tapioca flour can produce a taste different from typical amplang, while reducing tapioca allows other ingredients' flavors to be more pronounced, resulting in a more authentic amplang flavor. Future research could further explore other factors affecting amplang taste, such as the type of tapioca flour, type of oyster, and frying time. A more comprehensive organoleptic test is needed to evaluate the taste, aroma, and texture of amplang in greater detail. Additionally, new amplang recipes can be developed based on the variations in tapioca flour quantity and oyster ratio derived from this study's findings.

c. Aroma Indicator

The use of garlic significantly affects the aroma of amplang, but reducing it too much also decreases the flavor, so excessive reduction is avoided. Therefore, the amount of oyster meat remains unchanged.

Amplang is a traditional snack from East Kalimantan, known for its distinctive aroma and delicious savory taste. The aroma of oyster amplang comes from a combination of ingredients such as oyster meat, tapioca flour, garlic, and other seasonings. However, the proportions of these ingredients can influence the resulting aroma. This study aims to optimize the aroma of oyster amplang by finding a balance between garlic and tapioca flour. The research used an experimental design with three dough formulas, each having different proportions of garlic and tapioca flour. The dough was then fried, and the resulting aroma of the amplang was observed.

The use of garlic significantly influences the aroma of amplang. Reducing garlic enhances the oyster aroma but also decreases the flavor of amplang. This indicates that garlic not only plays a role in creating the aroma but also contributes to the savory flavor of amplang. The study did not alter the amount of oyster meat, instead focusing on the adjustment of tapioca flour and garlic. Although the oyster aroma in formula 3 did not reach the "very distinct" level as expected, the resulting aroma was classified as "fairly distinct." This shows that adjusting tapioca flour and garlic can enhance the oyster aroma without significantly diminishing the flavor of amplang.

This research demonstrates that garlic and tapioca flour play important roles in producing the aroma of oyster amplang. Reducing garlic may enhance the oyster aroma, but its impact on amplang's flavor must be considered. Further studies are needed to find the optimal proportions of garlic and tapioca flour to produce a "very distinct" oyster aroma without compromising the oyster flavor. Future research could also analyze other factors influencing the aroma of amplang, such as the type of garlic, type of tapioca flour, and frying duration. A more comprehensive organoleptic test is needed to evaluate the aroma, taste, and texture of amplang in greater detail. Additionally, new amplang recipes can be developed with variations in garlic and tapioca flour proportions based on the findings of this study. The observation results can be derived from sensory evaluation of fish amplang, which classifies the product as having a "fairly strong specific" aroma.

d. Texture Indicator

This study examines the influence of tapioca flour, eggs, and mixing methods on the texture of amplang. The results show that formulas 1 and 2 produced a very hard texture, while formula 3 resulted in a puffed and moderately hard texture. These differences indicate that the texture of amplang is more affected by tapioca flour and eggs rather than oyster meat. The ideal texture of amplang is crispy but not overly hard. Several factors, such as tapioca flour, eggs, and mixing methods, can influence the resulting texture of amplang. This research aims to investigate the effect of tapioca flour, eggs, and mixing methods on the texture of amplang. The study used an experimental design with three dough formulas, each containing different proportions of tapioca flour, eggs, and mixing methods. The dough was then fried, and the texture of the amplang was observed.

Formulas 1 and 2 produced a hard texture. Formula 1, where the eggs were mixed directly without using a mixer, resulted in the hardest texture. Formula 2, which involved reducing the amount of tapioca flour and using a different mixing method (eggs were mixed first), produced a slightly better texture but was still hard. Formula 3 resulted in a puffed and moderately hard texture. Using less

tapioca flour and the correct mixing method (eggs mixed first) created a crispier and less hard amplang texture. These texture differences indicate that amplang's texture is more influenced by tapioca flour and eggs than by oyster meat.

This study shows that tapioca flour, eggs, and the mixing method are key factors in determining amplang's texture. Using less tapioca flour and the proper mixing method (eggs mixed first) can produce a crispy amplang texture that is not too hard. Future research could explore other factors affecting amplang texture, such as the type of tapioca flour, the type of eggs, and frying duration. A more comprehensive organoleptic test should be conducted to evaluate amplang's texture, taste, and aroma in greater detail. New amplang recipes can be developed by varying tapioca flour, egg proportions, and mixing methods based on the findings of this study. The research observation results indicated that the amplang was not crispy enough, which refers to the sensory evaluation of fish amplang as outlined in SNI 7762:2013.

4. CONCLUSION

After conducting research and gathering data using experimental tests and observation tables in the study titled "Making Oyster-Based Amplang from Lajari Village, Barru Regency," the following conclusions were drawn:

1. In the process of making oyster amplang, there are two stages in the experimental process:

- The first stage involves the preparation process, which is divided into three parts: material preparation or sourcing, weighing the ingredients, and equipment preparation.

- The second stage is the experimental process, which consists of seven steps: boiling the oysters, separating the oyster meat from the shell, grinding the oyster meat, mixing the eggs, mixing the ingredients, forming the dough, and frying

2. Based on the data analysis from three trials, documentation, and observations, it can be concluded that oyster-based amplang did not meet the quality standards set by SNI 7762:2013, mainly due to the very soft and non-voluminous texture of oyster meat. Therefore, the amount of tapioca flour needs to be doubled from the reference recipe. Oyster meat and fish meat are very different and cannot be treated the same. Oyster meat is much more watery, while fish meat has a firm texture, where the ratio of fish to tapioca flour can be 1:2. In contrast, oyster meat requires a 1:3 ratio to achieve results similar to traditional amplang. The research findings suggest that oyster meat cannot fully replace fish meat due to the significant difference in texture. Therefore, oyster-based amplang can be made, but it requires the addition of other meat types that are less watery and have more volume so that the amount of tapioca flour can be balanced with the main ingredient.

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