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Production of MANGANTA Tuna Shredded Fish

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ABSTRACT

Indonesia, as a maritime country, has abundant fishery resources, including in Lhokseumawe City, Aceh Province. Tuna and cob are the dominant fish species in Gampong Ujong Blang, Banda Sakti District, a key fishing center. However, excessive fish catches often exceed local demand, forcing fishermen to distribute them to nearby areas like Lhoksukon and Bireun. Those without delivery access struggle to sell their catch, leading to spoilage. Meanwhile, local fish processing industries lack facilities and knowledge to enhance fish value, resulting in tuna being consumed quickly before quality declines. To address this, processing tuna into shredded products presents a viable solution. "MANGANTA" shredded tuna offers a cheaper, lower-cholesterol alternative to beef floss. Enhanced with regional spices and fish meat separator technology, it has the potential to become an Acehnese food icon, creating business opportunities while addressing challenges faced by fishermen and processors.

Keywords: Shredded tuna, MANGANTA, food technology, Acehnese spices, *fish meat separator*, innovation, fisheries industry.

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INTRODUCTION

Lhokseumawe State Polytechnic is one of the vocational education institutions located in Lhokseumawe City, Aceh Province, Indonesia. The existence of a special field, namely food processing at the Department of Chemical Engineering, Lhokseumawe State Polytechnic, is a forum for research and development of science and technology, especially in the application of food resource results which are very closely related to the daily needs of basic humans. Indonesia itself is a maritime country that has great potential in the field of fisheries, both freshwater, brackish water, and seawater fisheries.

Fish is one of the sources of animal protein that is widely consumed by the public and is easy to get. Many directly processed products, intermediate raw materials, and derivative products can be produced from fish meat processing. The business sector offered through fishery products is also promising, such as restaurants, as well as nugget and fish ball factories that can be marketed at high prices and wide coverage because there are so many enthusiasts. In addition, fish and other fishery products are also used as export commodities to support the country's economy. Aceh Province is one of the other provinces in Indonesia that produces a lot of tuna, especially in the Lhokseumawe City area which is located on the coast. Based on data from the Central Statistics Agency (BPS) in 2018, Aceh's fishery production is recorded as follows:

Table 1. Tuna Fish Production in Lhokseumawe and Surrounding Areas

No.	City/Regency	Total Catch Tons/year
1.	Lhokseumawe	11.526,20
2.	Aceh Utara	9511,60
3.	Bireun	7405,00

Based on the data above, it shows the potential of fish as a very promising resource for the fisheries sector. This is based on the fact that first, Indonesia has large fishery resources both in terms of quantity and diversity. Second, the industry in the fisheries sector has a relationship with other sectors. Third, the national resource-based fisheries industry or known as national resources based industries, and fourth, Indonesia has a high *comparative advantage* in the fisheries sector as reflected in the potential of existing resources.

Although the availability of fish is abundant, fish is a commodity that quickly decays (perishable food) when compared to other foodstuffs. Spoilage is caused by enzymes, both from the fish itself and microbes and rancidity. The high moisture content in fresh fish accelerates the process of reproduction of decaying

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microorganisms contained in it. The durability of fresh fish is not long in becoming an obstacle in efforts to expand the marketing of fishery products. In fact, it often causes great losses when fish production is abundant. Therefore, for a long time, the community (fishermen) has tried to carry out various kinds of post-harvest processing processes to minimize these obstacles.

In Gampong Ujong Blang, Banda Sakti District, Lhokseumawe generally distributes fresh sea fish directly from fishermen to consumers whose transactions are usually carried out around the beach, and there are also those who distribute the caught fish to markets around the area and to nearby areas through the medium of ice containers that aim to maintain the freshness of fish for a longer time. However, some fishermen also use formalin as a fish preservative, which is basically very bad.

The durability of fresh fish has not long been an obstacle in efforts to expand the marketing of fishery products. In fact, it often causes great losses when fish production is abundant. Therefore, for a long time, the community has been trying to carry out various kinds of post-harvest processing processes to minimize these obstacles. Basically, the post-harvest processing process of fish aims to inhibit the proliferation of microorganisms in fish meat so that processed fish products will have a longer durability than fresh fish meat. There are various ways of post-harvest processing of fish, ranging from traditional to modern methods. One of the processed fish products is shredded fish.

Shredded meat is a form of dry processed meat product that is known by the wider community because besides its delicious taste, the market price is on average affordable by all levels of society. Shredded fish generally has a fairly good nutritional composition and can be consumed as a snack and as a side dish. The production of shredded fish is an alternative to fish processing in the context of diversifying fishery products, to extend the shelf life of food (inhibiting microbial growth and microbial activity), diversification (change of shape) of processed fishery products and anticipating the abundance of fish catches during the harvest period. With good processing, shredded fish can be stored for months without experiencing much deterioration.

However, several obstacles are still faced by the partner community (fishermen and beginner tuna shredded producers) in producing tuna shreds, including the availability of facilities and production equipment that is still limited so that production is not stable, the production capacity is still on a small scale, in addition to marketing management is still not good due to the lack of promotions and facilities that have not supported the development of distribution products to the community as consumers. Thus, the proposal submitted through the PT CPPBT program is to develop more widely about the MANGANTA (Mangat That) Tuna Shredded Tuna product as a typical Acehnese culinary food as a

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substitute for side dishes or toppings on rice, noodles, pizza or stuffing of spring rolls, lemper and as a snack.

METHOD

The development of "MANGANTA" products is carried out in Ujong Blang Village is mainly about application to the villagers.

- Selection of Raw Materials: Using fresh tuna fish as the main ingredient and Acehnese seasoning as the characteristic of the product.
- Production Process:
  a. Processing fish using *fish meat separator* technology to separate meat from skin and bones.
  b. Boil and simmer fish meat to reduce moisture content.
  c. Mix the meat with typical Acehnese spices and cook it until it becomes dried shredded.
- Packaging: Products are packaged in attractive and hygienic bottles, as per food safety standards.

RESULTS AND DISCUSSION

MANGANTA (Mangat That) Acehnese Tuna Shredded Fish is a 100% natural tuna shredded food product without preservatives produced by MANGANTA Tuna Shredded Fish. Shredded fish is in a solid form produced through Fish Meat Separator technology where the meat will be separated from the skin and bones at low temperatures. The boiled tuna meat is drained from the water and the meat is placed in the suirs. This is done to reduce the moisture content of shredded

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products because it will affect the durability (durability) of shredded products. Fish meat in suir-suir aims to expand the contact area of the meat with the spices so that the spices can be absorbed perfectly. MANGANTA Shredded Tuna uses a typical seasoning of the Aceh region which can distinguish this product from other shredded tuna products.

Product Development Background

As a maritime country, Indonesia has an abundant wealth of fishery products spread across almost every region, including Lhokseumawe City, Aceh province. Tuna, cob and the like are the majority of fish that are most abundant in the waters of Lhokseumawe city, especially in Gampong Ujong Blang, Banda Sakti District as a fishing center. Fish catches can occasionally soar to excessive numbers and are not accommodated in their own territory. To overcome this, many fish have been sent to several nearby areas such as Lhoksukon, Bireun and its surroundings. However, most fishermen who do not have access to delivery admit that they have difficulty in spending their catch when the number of fish is too much, so sometimes many fish just rot.

On the other hand, fish processing industry players in the surrounding area are also one of the consumers who receive fish, but due to the lack of facilities and public knowledge to increase the selling value of fish, most tuna fish are only used as food products that must be used up in a short period of time because the quality of the product will decrease if left unchecked. Given these conditions, to take advantage of the potential as well as overcome the problems that arise among partner communities (fishermen and fish processing producers). The processing of tuna fish into shredded products has good prospects in the fisheries and food sectors. "MANGANTA" tuna shredded fish products can replace shredded beef products because besides being cheaper, it has been researched that the cholesterol content is also lower. In addition, the products offered can also become food icons in the Aceh region because they are processed with a mixture of spices typical of the Aceh region with *fish meat separator technology*. In addition, shredded fish, which is in great demand by the Indonesian people, can be a business opportunity as well as overcome the problems of the partner community.

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Ownership of Innovative Products

The ownership of the MANGANTA Tuna Shredded Tuna product is on behalf of the inventor, namely Juanda, S.Pd, M.Pd and assisted by Dr. Teuku Rihayat, ST, MT and several lecturers or students.

Processed fish products in the form of shredded fish will be marketed, especially in the city areas of Lhokseumawe, Langsa, Bireun, Banda Aceh and Sabang considering the existence of tourists who annually crowd this city area so that it is suitable to be used as a place to market products both as a source of food menus and as souvenirs.

Product marketing is carried out through distribution to souvenir shops, supermarkets, kiosks or stalls for medium businesses as well as terminals/ports and airports with the aim of being easily accessible to every eye enthusiast in the form of processed fish products and culinary lovers. This shredded product is also planned to be marketed in *e-commerce* (online store).

Production cost/Cost of Production (HPP) of the product is Rp.37,000,- / bottle containing 200 grams. The planned selling price of the product is Rp.65,000,-/bottle containing 200 grams.

CONCLUSION

The "MANGANTA" Tuna Shredded Tuna product development program provides an innovative solution to overcome the challenge of tuna surplus production in the Lhokseumawe area, Aceh. By utilizing *fish meat separator* technology and Aceh's typical spices, this product not only increases the added value of tuna but also creates a typical food product that is of high quality and high economic value.

The implementation of this program is expected to have a positive impact, such as:

1. Increase the income of fishing communities and local producers through optimizing the processing of catches.
2. Absorption of new labor that contributes to the welfare of the local community.
3. Diversification of national food products that have wide market potential, both at the local and international levels.

With the planned product development, promotion, and business strengthening strategies, "MANGANTA" products have a great opportunity to become an Aceh culinary icon while contributing to regional economic growth. This program also proves the importance of collaboration between technology, innovation, and local wisdom in creating sustainable solutions for the community.

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