



ARTICLE RIVIEW SHRIMP EBI PRODUCTS IN INDONESIA

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quality, stages, drying, cabinet dryer, utilization.

ABSTRACT

Dried shrimp (ebi) is one of the alternative foodstuffs that can be used to replace fresh shrimp, because dried shrimp (ebi) has a fairly large BBD edible weight, which is 90%. (DKBM, 2017). The protein content of ebi shrimp (dry) is quite high, namely 62g / 100g of ingredients (TKPI, 2017). Ebi is a processed process of fresh shrimp that is processed into dried shrimp and is usually further processed into cooking seasonings. This review article aims to find out the processing and utilization of shrimp ebi in Indonesia. Shrimp ebi processing in Indonesia, which still uses the traditional processing process based on the research that has been reviewed related to the drying process using a cabinet dryer machine, is considered not optimal and meets SNI standards related to the processing of dried shrimp raw materials. The use of shrimp ebi in Indonesia which can be used as a raw material for food additives in Indonesia and is one of the ingredients to extend the shelf life of food products.

DESCRIPTION / INTRODUCTION

Shrimp is one of the fishery commodities that has high economic value, and is a food ingredient with a high protein content which is very beneficial for health, especially for child development. Shrimp also has mineral levels that are beneficial to the body (Rusmiyati, 2013).

Fresh shrimp has several disadvantages such as a relatively fast shelf life, expensive price and small edible weight (BDD) of 68% (DKBM, 2017). Dried shrimp (ebi) is one of the alternative foodstuffs that can be used to replace fresh shrimp, because dried shrimp (ebi) has a fairly large BBD edible weight, which is 90%. (DKBM, 2017). The protein content of ebi shrimp (dry) is quite high, namely 62g / 100g of ingredients (TKPI, 2017).

Ebi is a processed process of fresh shrimp that is processed into dried shrimp and is usually further processed into cooking seasonings. Ebi is used in various cooking menus to obtain the aroma of shrimp and is

used as a flavoring for dishes (Bank Indonesia, 2008). Ebi, also known as dried shrimp, is a product that is processed by traditionally drying. Ebi is a term quoted from the Japanese language. This product is very widely consumed among the public because it has a good taste, is very easy to get and practical to consume (Simamora, 2011).

Drying aims to maintain the durability of ebi products by reducing water activity, reducing weight and volume to save transportation space, packaging, and facilitate transportation. Drying also plays a role in increasing the sensory value of a food product, such as adding aroma, crispness, suppleness, and other sensors. Since the moisture content exceeds the level of drought and contamination of pathogenic bacteria occurs, excessive or poor drying can lead to a deterioration in quality. A decrease in the water content of foodstuffs causes a concentration of proteins, fats, carbohydrates, and minerals.

Data from BPS (Central Statistics Agency) Riau in 2015 said, krosok shrimp is one of the most widely used types of shrimp for making dried shrimp (ebi) totaling 39 tons. Many small businesses are starting to emerge in producing shrimp, the interest in shrimp ebi continues to increase which will be processed into cooking seasonings. The process of processing dried shrimp is carried out in a traditional way in several coastal areas in Indonesia, one of which is in The Root Strait Village, Tasik Putri Puyu District, Meranti Islands Regency, Riau, so it requires labor and a long time. Because the stripping process is carried out by hempas/slamming human labor, which tends to result in fatigue, this is considered an inefficient way. The problem that managers face is that when they get a large shrimp they feel (overwhelmed) during the process of stripping dried shrimp shells (ebi). Because, in the process of stripping it, it is still from the manual way. This review article aims to find out the processing and utilization of shrimp ebi in Indonesia.

Types of Ebi Shrimp

The types of shrimp commonly used in making ebi are krosok shrimp (*Metapenaeus lysianassa*) and api-api shrimp (*Metapenaeus monoceros*) (BSN 2010). Krosok shrimp (*Metapenaeus lysianassa*) is a type of shrimp that is commonly used in the manufacture of ebi. Krosok/peci shrimp are basically small shrimps located around the water area. This krosok shrimp is a shrimp that is easy to get in Indonesian waters, especially its low price of 6000-18,000 per kg makes this shrimp widely used as raw material for making ebi. Data from BPS (Central Statistics Agency) Riau in 2015 showed that the production of krosok shrimp, which is one of the most widely used types of shrimp for making dried shrimp (ebi) amounted to 39 tons.

But in making ebi, you can also use other shrimps that are larger in size than rebon shrimp or shrimp that are small. Vannamei shrimp (*Litopenaeus vannamei*), Windu shrimp (*Penaeus monodon*), and other types of

shrimp, with the traditional shrimp processing process by utilizing the drying method can be categorized as shrimp ebi.

Taxonomic Classification of Shrimp

Shrimp are aquatic animals that are hermaphroditic probrates, meaning that animals in tubunhya have gonads to carry out the process of differentiation from male to female phase. Classification of krosok shrimp according to (Fransen, 2011):

Kingdom : animalia

Phylum : arthropods

Sub phylum : crustaceans

Class : malacostraca

Subclass : Eumalacostraca

Order : decapoda

Family : penaeidae

Genus : Mierspenaeopsis

Species : Mierspenaeopsis sculptilis



Figure 1. Krosok shrimp (*M. lysianassa*)

Source: Anonymous (2010)

Krosok shrimp is a shrimp that belongs to the family of penaeidae, because morphologically Krosok Shrimp has a mottled skin like tiger skin, by fishermen this shrimp is often referred to as Krosok Shrimp, Krosok Shrimp has a reddish-brown body with white stripes. Krosok shrimp has 2 pairs of legs, namely swimming legs and walking feet, the number of walking legs on this shrimp reaches 3 pairs and swimming legs are five pairs. Krosok shrimp has one pair of antennules, the total length of Krosok Shrimp is 12 cm, the abdomen length is 5 cm and the carapace length is 4 cm (Azizah, 2013).

The habitat of krosok shrimp shallow waters from the coastline to a depth of about 90 m, but mainly less than 40 m, on sand, mud, or mixed bottoms, is caught mainly by trawl trawls and coastal trawls (Azizah, 2013).

Utilization of shrimp Ebi

Ebi is shrimp that is dried to become a food flavoring. Ebi can be used as shrimp paste, chili sauce, or as a mixture of vegetables. Ebi can be said to be a natural and harmless micin. Shrimp ebi is rich in benefits because of its good nutritional content, here is its nutritional content: 259 kilocalories, 62.4 grams of protein, 1.8 grams of carbohydrates, 2.3 grams of fat, 1209 milligrams of calcium, 1225 milligrams of phosphorus, and 6 milligrams of iron. In addition, shrimp ebi also contains vitamin A as much as 210 IU, vitamin B1 0.14 milligrams and vitamin C 0 milligrams. The nutritional content of shrimp ebi can also prevent various diseases such as vascular cardio In addition to that selenium is also known as a powerful anti-depressant drug for people with depression. While the content of other nutrients in dried shrimp is also good for preventing diabetes, especially the low glucose content.

Stages of Making Shrimp Ebi

A. Tool

The equipment used in the manufacture of ebi is quite simple, namely

1. Pot, used a tool for boiling shrimp.
2. Stove, (furnace) is used for cooking.
3. Sieve, used to remove shrimp water.
4. Tampah (nyiru), used to place shrimp when dried in the sun.
5. Sacks, used for a place to pound shrimp after drying.
6. Plastic bags or other packaging, used for shrimp wrapping.

B. Ebi Manufacturing Materials

The following are the ingredients used in the manufacture of ebi:

The raw material used is fresh shrimp.

C. Manufacturing Stages:

- 1) Preparation of ebi raw materials using shrimp that is cleaned or washed beforehand to be clean from dirt
- 2) then boil the clean dang in a 30-minute saucepan.

- 3) Next, the shrimp is boiled. Boiling results in weight loss in shrimp, because the influence of heating on shrimp components can cause changes in the physical and chemical composition of meat (Zaitsev et al.1969). The boiling process has an important role in the manufacture of this product. Boiling by stirring periodically aims to get boiled shrimp according to the quality specifications of boiled shrimp and free from pathogenic bacteria.
- 4) After the boiled water is drained enough, then the boiled shrimp is dried until dry. Generally, drying is still donetraditionally by utilizing sunlight.
- 5) After the shrimp is completely dry, separate the skin from the meat by putting the dried shrimp in a sack and then mash it slowly.
- 6) Tampi and separate between the skin and shrimp meat.
- 7) The last stage is the packaging of ebi generally using plastic bags and is ready to be stored and marketed in dry conditions. This processed shrimp (ebi) has a fairly long shelf life. The post-production storage process also needs to be considered so that the quality of this ebi can be maintained and can be stored by nature.

Research Results

There have been several previous studies related to Indonesian shrimp ebi products. Based on abustang *et.al* research (2022), explaining the influence of mass variables and dryer temperature on the moisture content contained in the processing of vannamei shrimp ebi (*Litopenaeus vannamei*) using a cabinet dryer machine. In the process of processing, shrimp ebi is currently still using traditional methods. The drying process of ebi is mostly still in the traditional way, which is dried in the sun using sunlight. The production process is forced to stop if the weather is not favorable during the rainy season. This causes the production rate to be low. In this study, one of them was designed a mechanical drying system, one of which was a cabinet dryer (rack-type drying machine). Rack type dryer machine (cabinet dryer) has the advantage that the drying time and temperature can be adjusted so that the quality of the final product can be controlled properly (Natahniel, 2016 in Faiz, 2018).

In the study, the results were obtained that the temperature and initial weight of dried vannamei shrimp had a very noticeable effect on protein content, water content and amendments to the resulting vannamei ebi. The water content of ebi vannamei produced in this study has not met the SNI standards of dried shrimp. The following are the quality and safety requirements of dried shrimp without skin

Table 1. Quality requirements and safety of dried shrimp without skin

Test Type	Unit	Quality Requirements
a. Sensory	Numbers (1-9)	Minimum 7
b. Microbial contamination		Maximum
- ALT	Colony/g	1×10^5
- <i>Escherichia coli</i>	APM/g	Maximum < 3
- <i>Salmonella</i>	Per 25 g	Negative
- <i>Staphylococcus aureus</i>	Colony/g	Maximum 1×10^3
- <i>Vibrio cholera</i>	Per 25 g	Negative
c. Chemistry		
- Moisture content	%	Maximum 20
- Ash content	%	Maximum 14
- Insoluble ash content in acids	%	Maximum 0.3
- Salt content	%	Maximum 3

Shrimp Ebi products can be used as a source of substitution of food raw materials. Based on the research journal Yasmin and Lastariwati (2020) related to the substitution of adding shrimp ebi to *egg roll products*. The reason for choosing dried shrimp (ebi) as an ingredient in making egg rolls is to extend the shelf life of the product instead of using fresh shrimp and add nutritional content to the egg roll. This study used the R&D method with a series of 4D stages (define, design, develop, disseminate) and panelists as many as 30 people and used descriptive data analysis techniques. In this study, the results were obtained that the effect of dry shrimp substitution (ebi) on the taste and aroma of egg roll, namely, some panelists did not like ebi so they did not like the E-Roll Ebi egg roll product. There is no effect of dry shrimp substitution (ebi) on the texture of egg roll. The substitution of shrimp ebi affects the color of the egg roll, namely, there are brown spots so that it gives a motif to the egg roll that is liked by some panelists.

Meanwhile, in the research of Rahayu *et.al* (2018), shrimp ebi was used as an additional ingredient for loading tempeh nuggets. Dried shrimp (ebi) can be used as an additive in the manufacture of certain products, one of which is nuggets. The use of dry kick (ebi) in making tempeh nuggets is expected to be able to minimize the taste of tempeh that is not liked and the aroma of langu obtained from tempeh which is used as the main

raw material in making nuggets. This study used an experimental method with a Complete Randomized Design (RAL) research design where the difference between the percentage of dried shrimp (ebi) and the percentage of tempeh used consisted of 4 treatments, namely 2.5% : 97.5%; 7.5% : 92.5% and control (without ebi). The results of this study are; There is an effect of the use of dried shrimp (ebi) on the taste of tempeh nuggets, namely the greater the amount of utilization of dried shrimp (ebi), the higher the level of panelists' liking for the taste of tempeh nuggets. There is no effect of the use of dried shrimp (ebi) on the color of tempeh nuggets. There is an effect of the use of dried shrimp (ebi) on the aroma of tempeh nuggets, namely the greater the amount of utilization of dried shrimp (ebi), the higher the level of panelists' favorability for the aroma of tempeh nuggets. There is no effect of the use of dried shrimp (ebi) on the texture of tempeh nuggets

Conclusion

Based on the literature review as mentioned above, information was obtained as follows the stages of the process of making shrimp ebi. Shrimp ebi processing in Indonesia, which still uses the traditional processing process based on the research that has been reviewed related to the drying process using a *cabinet dryer* machine, is considered not optimal and meets SNI standards related to the processing of dried shrimp raw materials. The use of shrimp ebi in Indonesia which can be used as a raw material for food additives in Indonesia and is one of the ingredients to extend the shelf life of food products.

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