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"Squid Salted Products" Review Article

By

Junianto[1], Azka Reyza Afriza[2] and Adinda Nurkholifah[2]

1) Lecturer Staff of the Department of Fisheries, Padjadjaran University, Bandung-Indonesia

2) Students of the Undergraduate Fisheries Study Program, Padjadjaran University, Bandung-Indonesia

ABSTRACT

Salted squid is a processed fishery product that is widely practiced in Indonesia. This article aims to review salted squid products in terms of manufacture and product quality. Based on the literature review that has been carried out, information was obtained that the stages of salted squid seeding are as follows: cleaning fresh squid, soaking in salt solution, boiling in salt solution, and drying. The quality of salted squid products in Indonesia is regulated based on SNI **2719.1: 2011.**

Keywords : salt, processing, stages, quality, protein.

Introduction

Squid (*Loligo sp*.) belongs to pelagic organisms, but is sometimes classified as demersal because it is often present at the bottom of the water, the movements it performs are diurnal i.e. during the day it will be in groups near the bottom of the waters and at night it will spread on the water column. Squid belongs to carnivores and is phototaxis positively attracted to light.

Squid is an animal that belongs to the Mollusca group or soft-bodied, class Cephalopod that uses the head to move, the head is surrounded by 8 or 10 tentacles, in the mouth there is a strong shape like a bird's beak and there are small pointed and sharp teeth on its tongue (Meirina, 2008). The body of the squid consists of a head in the ventral, a short neck and a tube-shaped body with triangular fins on each side. On the head there is a pair of perfectly developed eyes, the mouth located at the end, surrounded by four pairs of hands and a pair of tentacles (Meirina, 2008).

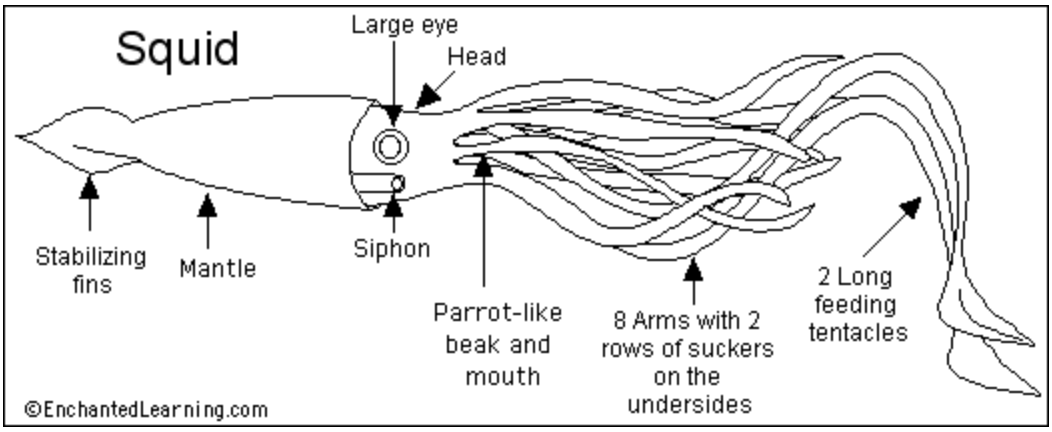

Figure 1. Squid morphology

Squid is a marine product that is widely found in Indonesian waters. Most squid is processed into high protein food ingredients. Squid has the property of easily experiencing a decrease in quality so it needs to be processed so that the taste is not reduced. Types of processed squid products as local consumption are still limited, including paper squid, salted dried squid, smoked squid and canned squid.

Squid has white meat which is one of its own advantages and is favored by the community. Squid is a type of cephalopod known in the trading world in addition to cuttlefish and octopus. In the field of commercial fisheries, squid is one of the most important fishery commodities and ranks third after fish and shrimp (Okuzumi and Fuji, 2000).

In Indonesia not all types of squid are preferred by the public to be consumed fresh, because it has very thick meat. Therefore it needs processing which makes this product more attractive. Processed squid is one of the alternatives that can be made in the development of squid-based eating products. Squid that has undergone boiling, drying and continued by frying so that the squid has an attractive appearance and distinctive aroma. This article aims to review salted squid products in terms of the manufacture and quality of their products.

Classification of Squid (*Loligo* sp)

Squid is a marine product that is widely found in Indonesian waters. Squid is one of the marine fishery resources in Indonesia that is nutritious and in great demand by the community. Squid (Longinidae) in the world of trade can fill the international market as one of the fishery products, in addition to fish and shrimp (Hasmawati 2015).

The classification of squid according to Barnes (1974) is as follows:

Kingdom : Animalia
Phylum : Mollusca
Class : Cephalopods
Order : Teuthida
Suborder : Myopsina
Family : Loliginidae
Genus : Loligo
Species : *Loligo sp*

Squid is the most widespread marine mollusk in the world (Okutani 2005). Squid production in Indonesia is estimated at 58.25 thousand tons per year (KKP, 2013). For example, one of the potential fishery resources in the waters of South Bangka Regency of Bangka Belitung Islands Province which is directly opposite the Karimata Strait and the South China Sea which is economically important and widely consumed and processed is squid (DKP South Bangka Regency 2013). According to Triharyuni (2012), cumicumi (Loligo spp.) is a soft animal (Phyllum Mollusca) that is much loved because it contains high nutritional value. Almost all parts of his body can be eaten. Genera that have value or economic potential are Loligo, Sepioteuthis, and Uroteuthis.

The nutritional content of squid meat can be utilized to meet human nutritional needs. According to Prabawati (2005) the protein content in squid is quite high. In 100 g of squid meat contains 15.3 g of protein, 1.0 g of fat, 79.3 g of water, 1.8 g of ash, calcium as much as 15 mg, phosphorus as much as 194 mg, iron 1 mg, thiamine as much as 0.03 mg and riboflavin as much as 0.08 mg.

Squid belongs to neuritic animals whose distribution from the surface layer to a certain depth. Life is clustered and attracted to the light of the lamp (positive phototaxis). According to Sin et al. (2009), squid is commercially an important fishery species in many coastal areas of Asia. Its deployment areas include the East China Sea, South China Sea, Gulf of Thailand, Arafura Sea, Timor Sea and Australian waters, western Pacific waters, Philippines, and Indonesia (Hamzah & Pramuji 1997; Carpenter & Niem 1998). According to Hartati et al. (2004), the breeding area of Loligonidae squid is found in almost all waters in Indonesia, one of which is the Strait of Malacca (Aceh, North Sumatra and Riau) and North Java (Jakarta, Central Java and East Java).

Squid Processing as a Squid Salted Product

Figure 2. Squid (*Loligo sp*)

Processing of fishery products aims to inhibit or stop substances (enzyme reactions) and the growth of microorganisms (living things) that can cause decay processes in fishery products.

Drying or salting, either with dry salt or salt water is widely used as a method of preserving seafood. This method is also used to make dried squid. Basically, salted squid is a sero squid or small-sized egg squid that is dried and salted with salt as a natural preservative. No wonder it feels like it's salty. Keep in mind, the process of preserving dried squid that is not good will make it textured a little wet and mushy.

The stages of processing salted squid in general carried out by producers in Indonesia are as follows:

1. Remove the squid's stomach (except the egg squid), then wash it with running water.
2. After that soak the squid for 30 minutes in a saline solution with a concentration of 15 percent of the weight of the squid, then cook together the soaking solution at a temperature of 100oC for 30 minutes.
3. After that drain the squid. Next, the next stage is drying.

According to Moeljanto (1992), drying food can be classified in three ways, namely:

- Drying with direct sunlight
- Ing with solar drying tools and
- Mechanical/artificial drying.

4. Dry the squid directly under sun exposure between 10:00 and 15:00 for five hours. The heat of the sun at this time generally refers to a temperature of 30-31oC. After that continue drying using a conventional oven with a low temperature between 45-60o for 4 hours or more, depending on the desired level of dryness of the squid.
5. Once roasting is complete, wind the squid until it is completely cool.
6. Squid is stored in airtight plastic to be ready for market.

Figure 3. Squid salted products

Salted squid as an alternative to the development of food products made from squid

Salted squid is squid or cuttlefish that is preserved with dry salt and then served for eating. Salted Squid is one of the alternatives that can be made in the development of food products made from squid.

Squid - Squid has the property of easily experiencing a decrease in quality so that it needs to be processed so that the taste is not reduced. Processed squid is one of the alternatives that can be made in the development of processed food products made from squid. Types of processed squid products as local consumption are still limited, including paper squid, salted dried squid, smoked squid and canned squid.

Squid has white meat which is one of its own advantages and is favored by the community. Squid is a type of chepalopoda known in the world of trade in addition to cuttlefish and octopus. In the field of commercial cultivation, squid is one of the most important fishery commodities and ranks third after fish and shrimp (Okuzumi and Fuji, 2000 *in* Pricilia, 2011).

Squid that is worthy as a raw material is squid that is still fresh. which has the following characteristics:

1. The flesh is bright white or reddish in color,

2. Tentacles or head is still complete, when soaked in water will sink

3. Squid has a coat that when opened on the dorsal part appears the neck of the dorsal part attached to the head and coat

4. On the neck of the ventral there is a chiffon attached to the head and neck will

but not attached to the coat

5. On the neck there is cartilage as a neck support

6. Next to the dorsal coat there is a white and long-shaped pen with both ends tapered off.

Quality of Squid Salted Products Based on SNI

Product quality and safety requirements are one of the things that should be considered because it concerns consumer safety when consuming the product. Shrimp terasi products have several provisions or requirements related to quality and safety. **Based on SNI 2719.1:2011** Salted or dried squid generally has the following quality and food safety requirements:

Table 1. Food quality and safety requirements based on SNI 2719.1:2011

Jenis uji	Satuan	Persyaratan
a Sensori	Angka (1-9)	Minimal 7
b Cemaran mikroba		
- *ALT*	koloni/g	Maksimal 1 x10^5
- *Escherichia coli*	APM/g	<3
- *Salmonella**	per 25 g	Negatif
- *Vibrio cholerae**	per 25 g	Negatif
- *Staphylococcus aureus**	koloni/g	Maksimal 1,0 x 10^3
- Kapang	koloni	0
c Kimia		
- Air	%	Maksimal 20
- Garam	%	Maksimal 15
- Abu total	%	17
- Abu tak larut dalam asam	%	0,3
- Merkuri (Hg)*	mg/kg	Maksimal 0,5
- Kadmium (Cd)*	mg/kg	Maksimal 0,1
- Timbal (Pb)*	mg/kg	Maksimal 0,3
CATATAN * Bila diperlukan		

Table *1.* Sensory test based on SNI 2346:2011

Spesifikasi	Nilai	Kode contoh				
		1	2	3	4	5
1 Kenampakan						
• Utuh, warna *pink* kecoklatan cerah, bersih.	9					
• Utuh, warna coklat kekuningan kurang cerah, bersih.	7					
• kurang utuh, warna coklat kusam, kurang bersih.	5					
• kurang utuh, warna coklat kotor, kurang bersih.	3					
• tidak utuh, warna coklat kehitaman, kotor.	1					
2 Bau						
• Harum spesifik cumi kering	9					
• Agak harum spesifik cumi kering	7					
• Mulai tercium bau apek	5					
• Apek, sedikit tengik	3					
• Busuk dan tengik	1					
3 Rasa*						
• Enak, gurih	9					
• Enak agak gurih	7					
• Kurang enak, kurang gurih	5					
• Tidak enak, agak pahit	3					
• Tidak enak, pahit	1					
4 Tekstur						
• Padat, kompak, kering, sangat liat	9					
• Padat, kompak, kering, liat	7					
• Kurang padat, agak kompak, kurang kering, alot	5					
• Kurang padat, kurang kompak, agak basa, agak rapuh	3					
• Kurang padat, kurang kompak, kurang kering, rapuh	1					
CATATAN * dalam keadaan sesudah dimasak						

The Indonesian National Standard (SNI), is a standard set by BSN and applies in the territory of the Unitary State of the Republic of Indonesia. This standard is formulated by technical committees consisting of multi-stakeholders, be it the government, academia, industry circles and experts who are competent in their respective fields. Each technical committee is supported by a secretariat of technical committees spread across almost all Government Ministries and Agencies. ta taste, and function as a side dish.

Conclusion

Based on the literature review that has been carried out, information was obtained that the stages of salted squid seeding are as follows: cleaning fresh squid, soaking in salt solution, boiling in salt solution, and drying. The quality of salted squid products in Indonesia is regulated based on SNI **2719.1: 2011**.

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