



REVIEW ARTICLE “OCTOPUS CRACKER PRODUCTS”

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ABSTRACT

Octopus is a species that is widely found in Indonesian waters and processed into traditional products, namely crackers. This article aims to review the manufacture of octopus crackers. Based on the study of the riview literature obtained information that the stages of processing octopus crackers consist of material preparation, dough making, printing, steaming, slicing, drying and drying.

INTRODUCTION

Indonesia's wealth of marine resources is abundant because two-thirds of Indonesia's territory consists of the sea. The variety of Indonesian seafood commodities is also diverse because the Indonesian sea is in the Tropics. One of indonesia's seafood commodities is octopus.

Octopus is a species that is widely found in Indonesian waters and recorded its use is only dried and processed into frozen products for export purposes. Indonesia ranks 4th after China, Japan and Korea as octopus exporters in Asia with total octopus production reaching 17,080 tons (FAO, 2014). Octopus (*Octopus* sp.) is one of the marine biological resources that has great potential. Octopus has a high enough protein content that has the potential in providing food for human life, including three types known as delicious food ingredients, namely *Octopus vulgaris*, *Octopus ocellatus* and *Paraoctopus dofleni* (Asikin, 1981) in (Winarko,

2001).

Octopus contains effort to overcome excess production and at the same time maintain the quality of fish before being marketed or consumed, increasing the selling value of fish, as food diversification and to extend the shelf life of fish (Afrianto, 2011). Ways to maintain the quality of fishery products are needed processing and preservation efforts, both modern and traditional. This article aims to review the manufacture of octopus crackers. protein that is high enough that it quickly experiences the same quality deterioration as fish in general. The purpose of processing and preserving fish is in principle an

Octopus

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Here is the taxonomy of octopus (*Octopus*), which is as follows:

Kingdom : Animalia
Phylum : Mollusca
Class : Cephalopods
Order : Octopoda
Family : Octopodidae
Genus : Octopus
Species : Octopus vulgaris



Figure 1. Octopus (*Octopus sp*)

Octopuses are invertebrates that have 8 arms or tentacles and can reach 4.3 times their body length. Its

tentacles serve as a suction device.

Octopuses also have beaks that are the hardest part of their body. Octopuses can camouflage mimic the surrounding environment to avoid being targeted by predators. The octopus's self-defense system camouflages as well by severing its tentacled arms can even grow back even if it is cut or injured.

Octopus (*Octopus sp*) has salivary venom and black ink that can blind predatory animals. The way an octopus moves is very unique, namely by spouting water, such as how a jet engine works. Octopuses can enter even the smallest gaps even if their body size is larger, because they have no bones and shells either externally or internally.

Octopuses are very happy to hunt for food at night, the life span of octopuses is very short, which is only 5-6 months. Octopuses have gills with a very fine division, derived from the growth of the outer or inner body that is vasculated.

Octopus Cracker Processing

Octopus crackers are traditionally processed products of octopus. Kerupuk gurita is a processed product of octopus meat mixed with wheat flour or tapioca flour, spices, salt, and flavorings, producing different flavors.

The material used consists of the main material and supporting materials. The main ingredient is octopus meat. Supporting materials are:

- **Tapioca flour**, as a *puffable material*. *Puffable material* is a material that plays a major role in the product expansion process. The quality of the resulting crackers such as development volume, crispness and the level of consumer fondness for taste are influenced by the quality of flour that meets organoleptic requirements, such as the appearance of white, dry, clean and does not smell sour.
- **Eggs**, the function of eggs in the formation of crackers is to increase the nutritional value, taste and nature as an emulsifier and bind the components of the dough. Crackers made from tapioca flour with an egg yolk mixture of no more than 15 percent (percent of the total added eggs) have been able to improve taste, crispness and volume development. The lychee contained in eggs will help soften the flour gluten
- **Salt**, Salt is added to add flavor and strengthen the bonds of the structure of the dough component tissue. Usually salt is traded in the form of molded salt or flour salt. The amount of salt that can be added is as much as 2-4 percent of the amount of flour.
- **Sugar**, the addition of sugar aims to provide a sweet taste, add nutritional value and as a binding agent.
- **Garlic**, to improve or add flavor, can be added spices or flavoring ingredients to the cracker dough.
- **Water and Cooking oil**.

The tools used are quite simple and easy to obtain. These tools include basins, knives, cutting boards, blenders, molds, pots, stoves and pans.

The stages of processing octopus crackers consist of material preparation, dough making, printing, steaming, slicing, drying and drying.

a) Material Preparation

Fresh octopus used in the manufacture of crackers is cleaned by separating the contents of the head, teeth, eyes and opened skin and washed thoroughly using water and ice, after which the octopus meat that has been cleaned is mashed (crushed) using a blender.

b) Dough Making

Making dough is carried out by mixing all the ingredients until homogeneous. Tapioca flour, octopus meat, seasonings and water that have been mashed mixed and cared for by hand, this mixing is done for 15 minutes until a homogeneous dough is formed. The dough when held with hands is not sticky, indicating that donation is enough.

c) Printing

When the dough making process is completed, the dough is printed or formed into a lontongan (cylinder) shape using stainless steel sleeves in which it is coated with banana leaves.

d) Steaming

The dough that has been in the form of lontongan using stainless steel sleeves is then steamed until cooked for 2 hours at a temperature of 100 oC. The way to find out the steamed dough has been cooked is to be pierced by using a twist into the dough and pull it, if the dough is still attached to the lidi indicating the dough is not cooked and vice versa if there is no dough attached to the lidi indicates the dough is cooked.

e) Slicer

The dough that has been cooked, then removed from the bather then stored in room temperature 27 °C for 24 hours until cool and hardened, after cold sliced to a thickness of 3 mm using a knife. Uniformity of size is important to obtain the appearance and penetration of heat evenly so as to facilitate the frying process and produce fried crackers with a uniform color.

f) Drying

The drying process of raw crackers aims to produce materials with a certain moisture content. The moisture content contained in raw crackers will affect the quality and development capacity of crackers

in the next frying process. A certain degree of dryness is needed raw crackers to produce maximum steam pressure in the frying process so that the cracker starch gel can expand. Drying crackers also aims at preservation, reduction of transportation costs and maintaining quality.

Drying or drying that is done is to use natural drying. Natural drying is drying using sunlight, where the cooked dough that has been sliced is arranged on para-para or clean base and then dried in the sun. Drying with the heat of the sun takes 2 days, when the weather is clear and about 4-5 days when the weather is less sunny. From this drying process, raw crackers with a moisture content of about 14% or raw crackers are easily broken.

g) Frying pan

The cracker fryer aims to produce fried crackers that expand and crisp. In the frying process, raw crackers heat up so that water bound to the tissue can evaporate and produce steam pressure to develop the elastic structure of the cracker tissue.

This stage of frying is to do the frying by way of deep fat frying. Dried crackers are fried using cooking oil. The temperature used in the frying pan is 120 oC (Alfisyahrica, 2015) for 10 seconds.

During the process of frying raw crackers produce a hissing sound from bubbles that arise and break on the surface of the oil. The resulting fried crackers have a flat surface or slightly curved and crispy

So that fried crackers do not contain too high oil at the time of storage then shortly after the crackers are finished frying, the fried crackers are placed in a container. Then the container is shaken so that the oil that is still attached to the crackers can drip at the bottom of the container. Another way is to blow hot air immediately after frying.



Figure 2. Octopus Crackers (Source: <https://yenniftrias.blogspot.com/2017/05/kerupuk-gurita-khas-kaur-provinsi.html>)

Cracker Quality Standards in Indonesia

The quality requirements of protein-sourced crackers can be seen in table 1 below:

Table 1. Cracker Quality Requirements

Parameter Uji	Satuan	Kriteria
Bau, rasa, warna		Normal
Keutuhan	% b / b	Min. 95
Air	%	Maks. 12
Abu tanpa garam	% b / b	Maks. 1
Protein	% N x 6,26	Maks. 18
BTM		Sesuai Anonim, 1988
Boraks		Tidak Ternyata
Cemaran logam :		
Pb	mg / kg	Maks. 1,0
Cu	mg / kg	Maks. 10
Zn	mg / kg	Maks. 40
Hg	mg / kg	Maks, 0,05
As	mg / kg	Maks. 0,5
Cemaran mikrobia.		
Angka lempeng total	Koloni / g	Maks 1,0 x 10 ⁶
<i>Escherichia coli</i>	APM / g	3
Kapang	Koloni / g	Maks 1,0 x 10 ⁴

Sumber : Departemen Perindustrian dan Perdagangan (1990)

Conclusion

Based on the study of the riview literature obtained information that the stages of processing octopus crackers consist of material preparation, dough making, printing, steaming, slicing, drying and drying.

References

- Budiyanto, A and Herri Sugiarto. 1997. Notes On the Eight-Handed (Octopus / Octopus Spp.). *Oceanana*. Volume Xxii. Numbers 3, H. 25 – 33
- Devi Natalia., Moh. Nuh Ibrahim., Kobajashi T. Isamu (2018). SENSORY, CHEMICAL AND PHYSICAL TESTS OF OCTOPUS CRACKERS WITH THE ADDITION OF DIFFERENT CONCENTRATIONS OF OCTOPUS MEAT (*Octopus cyanea*). *Fish Protect Journal*. 1(2) : 102-112. Fisheries Products Technology, Faculty of Fisheries and Marine Sciences, Halu Oleo University. Kendari.
- Food Agriculture Organization. 2014. Cephalopods of The World, An Annotated and Illustrated Catalogue of Cephalopod Species Known to Date, Volume 3. *Octopods and Vampire Purposes* 4 (3): 1020- 8682.
- Georgio C. Mcgavin, 2010, *Ensiklopedia Dunia Hewan (Invertebrata)*, Jakarta: Pt. Lentera Abadi. H. 543.
- Hariyani, M. P., & Nunuk, I. (2018). Kerupuk Lemi Bebas Boraks Kajian dari Dosis Natrium Tripolyphospat yang Berbeda.
- Herawati, H. "Cara Membuat Kerupuk Gurita Khas Bengkulu". <https://carabuatresep.blogspot.com/2022/01/cara-membuat-kerupuk-gurita-khas-kaur-bengkulu.html>. Diakses 17 Maret 2022
- Karinasari, F. et al., "Upaya Pengembangan Usaha Kecil Menengah (UKM) Kerupuk Gurita Di Desa Linau Kecamatan Maje Kabupaten Kaur.(Studi Kasus Desa Linau Kecamatan Maje Kabupaten Kaur Provinsi Bengkulu)," *Repository Universitas Muhammadiyah Bengkulu*, accessed March 17, 2022, <http://repo.umb.ac.id/items/show/553>.
- katadesa.id."Novi, Sang Perintis Kerupuk Gurita dari Bengkulu". 25 Agustus 2020. <<https://katadesa.id/index.php/daya-desa/potensi-desa/176-novi-sang-perintis-kerupuk-gurita-dari-bengkulu/>>[Diakses, 17 Maret 2022]
- Nur Rochman, Dkk. 2013. Studi Morfometri Dan Faktor Kondisi Sotong (*Sepiella Inermis*: Orbigny, 1848) Yang Didaratkan Di Ppi Tambaklorok. Semarang. *Diponegoro Journal Of Maquares*. 2 (4),: 91-99.
- Susilo, H. 2001. *Pembuatan Kerupuk Kerang Hijau (Mytilus viridis L.) Menggunakan Telur Itik Sebagai Bahan Tambahan [Skripsi]*. Bogor: Jurusan Teknologi Hasil Perikanan, Institut Pertanian Bogor.
- Winarko, A. 2001. *Studi Beberapa Aspek Biologi dan Efisiensi Ekonomi Unit Usaha Perikanan Gurita (Octopus sp.) [Skripsi]* Jurusan Perikanan Fakultas Ilmu Kelautan dan Perikanan Universitas Hasanuddin Ujung Pandang.