



## REVIEW ARTICLE TUNA FLAVORING POWDER

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### KeyWords

Synthetic, protein content, moisture content, nausea, natural.

### ABSTRACT

Fish-based flavoring powder is an alternative to the use of synthetic flavorings that are widely used by the people of Indonesia. This article aims to review fish-flavoring powders. Based on the literature study obtained information that the manufacture of flavorings made from fish can use the meat and head. The fish head used can come from the industrial waste of fish fillets. The proximate composition and degree of fondness for flavoring are influenced by the type of fish meat used.

### Introduction

The majority of Indonesian people in making dishes are always added flavoring powder. A commonly used flavoring powder is monosodium glutamate (MSG). Monosodium glutama is produced from the process of protein hydrolysis. Sources of protein obtained from plants / plants. Vegetable protein contains 40% glutamic acid while animal protein contains 11-22% glutamic acid. Glutamic acid is a non-essential amino acid because the body can produce aglutamic acid.

The addition of MSG to each processed food causes the body to receive intake every day. Msg intake every day will have a bad impact on the human body. The common adverse effects felt by the body are easily drowsy, excessive sweating, headaches, nausea, heart beating, chest pain and can decrease brain function. Currently there is a substitute option for the use of MSG, namely animal flavoring powder. Flavoring powder from animal raw materials that have been on the market is from raw materials for chicken, beef and fish. This article aims to review fish-flavoring powders.

## Flavoring

Flavoring is a food additive to add flavor and improve the quality of taste in food. Flavoring consists of 2 types, namely natural flavoring and synthetic flavoring. Natural flavorings are obtained from plants and animals directly or through physical, microbiological, or enzymatic processes. Synthetic flavorings are not found in nature, obtained from chemical processes with raw materials from nature and mining products.

Flavoring perception is defined as sensations arising from the integration (merging) or mutual influence of signals produced as a result of the detection of chemical components by the sense of smell, sense of taste and abundance of stimuli from food or drink. Flavoring perception is influenced by the availability of volatile components and the result of interactions between the main components and aroma components in food. Flavor release depends on the availability of flavor components in the gas phase and affinity between the flavor component and the food matrix. The properties of flavor components will determine interactions with food components such as molecular size, functional groups, shape and volatility (Naknean and Meenune 2010).

The development of the food flavoring industry in Indonesia looks increasingly in demand by the public. Flavorings circulating in Indonesia are dominated by synthetic flavorings (MSG). This synthetic flavoring can have an effect on the health of the human body including dizziness and nausea. Based on Widyalyta et al., (2014), although allowed as a flavoring dish, excessive use of MSG can cause dizziness and nausea. This symptom is called Chinese Restaurant Syndrome. Public reports to the Food Drug Administration (FDA), 2% of all MSG users experience health problems, so WHO set adi (Acceptable daily intake) for humans at 120 mg / kg<sup>3</sup>.

Alternatives to synthetic flavorings are natural flavorings, including flavorings made from fish. The manufacturing process is quite simple and easy to do, namely by boiling.

The fish to be cooked receives heat with a water medium. Boiling can lead to greater loss of nutrients in fish. This happens because during the boiling process the fish is submerged in water so that some water-soluble nutrients such as protein are dissolved in the boiled water causing the fish stew water to contain nutrients and have a savory taste that can be used as a flavoring agent. According to Pundoko et al., (2014), in the process of processing fish many important nutrients such as proteins, fats and moisture content that may be lost during the processing process, especially after the boiling process. During the boiling process that takes time allows a lot of protein and fat to be lost or carried away in boiled water. This boiled water is the basis for making flavorings.

In addition, boiled water used as raw materials needs to be supplemented with fillers or thickeners to stabilize the dough. A commonly used filler is wheat flour.

Wheat flour is flour produced from processing wheat seeds so that it contains starch or complex carbo-

hydrates from the endosperm of wheat seeds. Wheat flour is used as a thickener and can also be used as a dough stabilizer. According to Yuanita and Silitonga (2014), the function of flour is as a filler and binder to improve emulsion stability, decrease shrinkage due to ripening, give a light color, improve product elasticity. In addition, it can form a dense texture and draw water from the dough. The following is conveyed the process of making flavorings made from raw parts of fish such as meat, head and offal.

### Flavoring Making from fish meat

Fish meat that can be used as flavoring ingredients are tuna, skipjack, cob and mackerel. In addition to fish meat, there are also additional ingredients used. Additional and other ingredients and tools in the manufacture of this flavoring as found in Table 1 (Fadila and Juhartini, 2021):

**Table 1.** Flavored Tools and Materials Made from fish meat

Tool	Material
Food scales	Fish meat
Measuring cup	Mineral water
Wok	Salt
Blender	Garlic
Sieve	Onions
Microwave	Carrot
Washbasin	Spring onion
Sterile container	Nutmeg seeds
Knife	Lemongrass and celery
Stove	Pepper powder

The stages of its creation are as follows:

1. The meat of the fish that has been removed skin and bones is soaked in a solution of lemon water and salt for 15 minutes. After that it is washed thoroughly.
2. The meat that has been soaked and washed is boiled with enough water and supplemented with nutmeg seeds, and lemongrass (scooped). Boiling lasts for 10 minutes.
3. Next mixed with spices such as garlic, onions, onions and others. After that it is blended to mix evenly.
4. The dough mixture is roasted (fried without oil) until slightly dry (thick dough) and browned yellow, it takes about 60-90 minutes.

5. Next, flatten it into a baking sheet, then dry through the roasting process in the oven and blender until it gets a powder with a smooth texture.
6. Then put in a tightly sealed sterile container.

### Flavoring manufacture from fish heads

Fish heads used as flavoring materials are waste from the fish fillet industry. Commonly profiled fish are catfish, tilapia, tenggiti fish, cob fish.

The stages of making it are as follows: The head of the fish is still freshly cut into pieces and washed thoroughly. Next mixed with water and salt in the pot and then boiled for 30 minutes with a boiling temperature of 80 - 100 °C with the addition of seasoning (onion, garlic, pepper, and salt). The broth from the stew is filtered with a sieve and then the broth liquid (filtrate) is filtered / pulp-free. Then the broth (filtrate) is given the addition of fillers, wheat flour. Broth that has been added wheat flour is done drying using the oven. After dry is crushed using a blender until it is powdered, then sifted so that flavoring powder is obtained, then packaged.

Rusteristic Chemical Flavoring of Meat type raw materials and fish heads

Various studies related to the manufacture of flavorings made from fish head meat have been widely done in Indonesia. Here are the results of this research.

The research results of Tamaya et al (2020) obtained information as contained in Table 2.

**Table 2.** Protein content and flavoring moisture content of various fish meat raw materials

Types of fish meat	Protein content and flavoring water	
	Protein levels	Moisture content
Lukeed fish meat	16,54 %	5,69 %
Bawal fish meat	11,26 %	7,98 %
Kurisi fish meat	8,78 %	6,13 %

Based on Table 2 above, the type of fish meat has an impact on the difference in the proximate content of the flavoring produced. The level of fondness for flavoring produced is also influenced by the type of fish meat used as reported by Tamaya et al (2020) in Table 3.

**Table 3.** Favorite level of flavoring of various raw materials of fish meat

Types of fish meat	Favorability level value			
	Appearance	aroma	taste	texture
Lukeed fish meat	7,27	7,33	7,30	7,37
Bawal fish meat	7,57	7,47	7,50	7,30
Kurisi fish meat	7,57	7,00	7,40	7,33

## Conclusion

Based on the literature study obtained information that the manufacture of flavorings made from fish can use the meat and head. The fish head used can come from the industrial waste of fish fillets. The proximate composition and degree of fondness for flavoring are influenced by the type of fish meat used.

## References

- [1] Antara N, Wartini M. 2014. *Aroma dan Komponen Flavor*. Tropical Plant Curriculum Project. Udayana University.
- [2] David, Fred R. 2002. *Manajemen Strategis*. Alih Bahasa: Alexander Sindoro. Penyunting: Agus Widyantoro. Penelaah: Hamdy Hady. PT Prenhallindo, Jakarta
- [3] Eko Budi Kuncoro dan F.E Ardi Wiharto. 2009. *Ensiklopedia Populer Ikan Air Laut*. Yogyakarta: Lily Publisher. hlm. 100
- [4] Fadila, Juhartini. 2021. Mutu Organoleptik dan Kandungan Histamin Penyedap Rasa Bubuk Ikan Tuna Sirip Kuning (*Thunnus Albacares*). *Hospital Majapahit* Vol. 13 No.1.
- [5] Mahendradatta, M., Putri, T.P., Indrastuti, Bastian, G., Tawali, A.B. 2011. Development of Seasoning Powder as Flavor Enhancer Made from Fish Paste. Presented at International Conference, Short Course and Exhibition on Nutraceutical and Functional Foods. <http://repository.unhas.ac.id/bitstream/handle/123456789/619/1/2010.pdf?sequence=1> 12 Februari 2018.
- [6] Manggarayu, 2017. Cara dan Tips Membuat Kaldu Bubuk Homemade. <https://resep.koki.id/2017/08/15/cara-tips-buat-kaldu-bubuk-homemade/>, 7 Februari 2017.
- [7] Negara. J. K., Sio. A. K., Rifkhan, Arifin M., Oktaviana. A. Y., Wihansah R. R. S., Yusuf. M. 2016. Aspek Mikrobiologis serta Sensori (Rasa, Warna, Tekstur, Aroma) pada Dua Bentuk Penyajian Keju yang Berbeda. *Jurnal Ilmu Produksi dan Teknologi Hasil Peternakan*. Vol. 04 (2): 286-290.
- [8] Nurdin, E. 2017. Rumpon sebagai alat perikanan tuna berkelanjutan, Sirip kuning (*Thunnus albacares*). IPB.

Sekolah Pascasarjana Bogor. 157 hlm.

- [9] Nurhadi, B. Nurhasanah, S. 2010. Sifat Fisik Bahan Pangan. Bandung: Widya Padjajaran.
- [10] Nurjanah, Abdullah, A. Tarman, K., 2011. Pengetahuan dan Karakteristik Bahan Baku Hasil Perairan. Bogor (ID): IPB Press.
- [11] Purnama, CM Lingga. 2001. Strategic Marketing Plan: Panduan Lengkap dan Praktis Penyusunan Rencana Pemasaran yang Strategis dan Efektif. PT Gramedia Pustaka Utama, Jakarta.
- [12] Putri, B.R.T. 2003. Analisis Strategi Pemasaran DOC Pedaging pada PT X Unit Bali. Thesis Program Pasca Sarjana Institut Pertanian Bogor, Bogor.
- [13] Rahajeng, M., 2012. Ikan Tuna Indonesia. Warta Ekspor Edisi Juni 2012. PEN/MJL/003/6/2012 Edisi Juni. Kementerian Perdagangan RI.
- [14] Saanin, H. 1984. Taksonomi dan Kunci Identifikasi Ikan. Jakarta : Bina Cipta.
- [15] Saputra, S.W., A. Solichin, D. Wijayanto, dan F. Kurohman. 2011. Produktivitas dan kelayakan usaha tuna long line di Kabupaten Cilacap Jawa Tengah. J. Saintek Perikanan, 6(2):84-91.
- [16] Silas, E.G. dan P.P. Pillai. 1982. Resources of tunas and related species and their fisheries in the Indian Ocean. CMFRI Bulletin 32.190 p.
- [17] Singgih Wibowo, 2010. Manajemen Produksi, Edisi Empat, Yogyakarta, BPFE
- [18] Sivadas, M. dan A. Anasukoya. 2005. On the fishery and some aspects of the biology of Dogtooth tuna (*Gymnosarda unicolor* (Ruppell) from Minicoy, Lakshadweep. J. Marine Biology Association of India, 47(1):111-113.
- [19] Sutisna. 2001. Prilaku Konsumen dan Komunikasi Pemasaran. PT Remaja Rosdakarya, Bandung.
- [20] Syah MS. 2020. Pemanfaatan Air Limbah Rebusan Ikan Tamban (*Sardinella Sp.*) Sebagai Flavor Pasta Alami Dengan Berbagai Suhu Pemanasan. [Skripsi]. Universitas Maritim Raja Ali Haji. Tanjungpinang.
- [21] Triharyuni, S. dan B.I. Prisantoso. 2012. Komposisi jenis dan sebaran ukuran tuna hasil tangkapan long line di perairan Samudera Hindia Selatan Jawa. J. Saintek Perikanan, 8(1):52- 58.
- [22] Uktolseja JCB, Gafa B, Bahar S, Mulyadi E. 1991. Potensi dan Penyebaran Sumberdaya Ikan Tuna dan Cakalang. Jakarta: LIPI.
- [23] Umar, Husein. 2002. Strategic Management in Action. PT Gramedia Pustaka Utama, Jakarta.
- [24] Umar, Husin. 2000. Riset Pemasaran dan Prilaku Konsumen. PT Gramedia Pustaka Utama, Jakarta.
- [25] USDA, 2019. Food Data Central. U.S. Department of Agriculture. [https://fdc.nal.usda.gov/fdc-app.html#](https://fdc.nal.usda.gov/fdc-app.html#/)/
- [26] Wujdi, A., Jatmiko, I., Setyadi, B., Sulistyaningsih, R.K., Novianto, D., Rochman, F., Bahtiar, A., Hartaty,

H., 2014. Distribution and Biological Aspect Yellowfin Tuna (*Thunnus albacares*) Caught by Indonesian Tuna Longline in The Eastern India Ocean. Dipresentasikan pada 16th Meeting Session of IOTC Working Party on Tropical Tunnus, Bali 15-19 November 2014. <http://iotc.org./documents/distribution-and-biological-aspect-yellowfin-tuna-thunnus-albacares-caught-indonesian-tuna>. Diakses pada 5 Februari 2019

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