ABSTRACT

The purpose of this research is to analyze the production process of salted kadukang fish (*Hexanematiichthys sagor* (Hamilton, 1822)), and their organoleptic quality in Pangandaran - West Java, Indonesia. This research was carried out from March 5 2023 to April 6 2023. The research method used is a survey method. The research procedure was carried out in two stages. The first stage observed the process of making kadukang salted fish products and the second stage tested the organoleptic quality of the salted fish it produced. An analysis of the production of kadukang salted fish was carried out by observing the production site and interviewing workers and business owners. The production of salted kadukang fish which was used as an observation belonged to Mr. Asep. Organoleptic quality testing is done by scoring test. The data obtained were analyzed descriptively. Based on research results, it was found that the process of making salted fish includes removing unused fish parts (entrails, gills and heads), washing, rinsing, adding salt into the stomach of the fish which is left for 2 days in a closed container, dividing the fish, and drying for 2-3 days. Test results The organoleptic value of salted kadulang fish was obtained on average 8, which means it is suitable for consumption according to Indonesian national quality standards.
Keywords: Observation, Washing, Texture, Traditional, Micro, Small and Medium Enterprises, *Hexanematichthys sagor*

1. INTRODUCTION

Pangandaran waters have a large potential for marine biological resources. The oceanic characteristics of these waters are influenced by water conditions which are directly related to the Indian Ocean (Dewanti et al., 2018). The fisheries and tourism sectors in Pangandaran Beach can provide business opportunities for the local community to process abundant marine products into souvenirs for tourists visiting Pangandaran Beach. The large fishery potential in Pangandaran Regency is followed by the development of the fishery product processing industry which is spread in every district, both on a large scale and on a household scale in the form of Micro, Small and Medium Enterprises (MSMEs).

Several types of products that have been marketed and are characteristic of Pangandaran Regency include salted fish, jambal fish, fish floss, fish crackers, dried squid, shrimp paste and several other fish-based dishes. The development of fishery-based products has the potential to be implemented in Pangandaran Regency because they can be used as souvenirs for tourists visiting this area (Firiyanti, 2020).

Fish (*Hexanematichthys sagor*) is a fish that is usually used as salted fish in the Pangandaran area, this fish is found in estuarine waters (Figure 1). According to Kurniawan et al., (2019) kadukang fish have the following classifications:

- **Kingdom**: Animalia
- **Phylum**: Chordata
- **Class**: Actinopterygii
- **Order**: Siluriformes
- **Family**: Ariidae
- **Genus**: *Hexanematichthys* Bleeker, 1858
- **Species**: *Hexanematichthys sagor* (Hamilton, 1822)

![Figure 1. Kadukang Fish (*Hexanematichthys sagor* (Hamilton, 1822)), (Sagor catfish).](image_url)
Kadukang (*Hexanematichthys sagor*) fish has characteristics, namely; The body is slippery, not scaly, has a length of up to 45 cm. It is equipped with three pairs of beards and a head that flattens flattened towards the muzzle. The longest beard is found on the upper jaw until it reaches the middle of the pectoral fins. The upper side of the head has pieces of bone similar to a shield with a rough pattern. The pectoral and dorsal fins each have a serrated patil. Kadukang fish also has a distinctive color, which is silvery ash. The upper and side sides of the body are brownish-gray. All fins are blackish, only the soft part of the dorsal fin is light.

The processing of Kadukang salted fish (*Hexanematichthys sagor*) in Pangandaran still uses traditional methods. According to Dinti *et al.* (2020), processing in this traditional way usually does not pay maximum attention to cleanliness, which can result in a decline in the quality of salted fish and its durability. In addition, the quality of salted fish is also influenced by the quality of the raw materials used.

Consumer acceptance is strongly influenced by product quality. According to Puni *et al.* (2020), the quality of salted fish consists of chemical and organoleptic or sensory quality. Organoleptic quality is a quality that is easily known directly by consumers. Therefore, this research aims to analyze the production process of salted salted fish kadukang (*Hexanematichthys sagor*) and its organoleptic quality in Pangandaran-West Java, Indonesia.

### 2. RESEARCH METHOD

This research was conducted from February 5 2023 to March 6 2023. The research method used is a survey method. The research procedure was carried out in two stages. The first stage observed the process of making kadukang salted fish products and the second stage tested the organoleptic quality of the salted fish it produced. An analysis of the production of kadukang salted fish was carried out by observing the production site and interviewing workers and business owners. The production of salted kadukang fish which was used as an observation belonged to Mr. Asep. Organoletic quality testing is done by scoring test. The format for the scoring test is shown in Table 1. The data obtained was analyzed descriptively.

**Table 1. Scoring Organoleptic Test**

<table>
<thead>
<tr>
<th>Organoleptic Properties</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Whole, clean, tidy, radiant according to kind,</td>
<td>9</td>
</tr>
<tr>
<td>Whole, clean, untidy, luminous according to kind.</td>
<td>8</td>
</tr>
<tr>
<td>Whole, clean rather dull.</td>
<td>7</td>
</tr>
<tr>
<td>Whole, not clean, a bit dull.</td>
<td>6</td>
</tr>
<tr>
<td>Slightly damaged physically, less clean, several. bag. rusty.</td>
<td>5</td>
</tr>
</tbody>
</table>
Slightly damaged physically, the color has changed. 4
Partially destroyed, dirty. 3
Destroyed, very dirty, color changes from the specific type. 1

### Smell

- Fragrant, species specific, without added odor. 9
- Nearly neutral, slightly added odor. - Neutral, slightly added odor. 8
- Additional disturbing odor, not rotten, slightly rancid - Rancid, slightly musty, smells of ammonia. 7
- Rancid, slightly musty, smells of ammonia. 6
- Unpleasant, slightly rotten, strong ammonia 5
- Rotten 4

### Texture

- Dense, compact, pliable, moderately dry 9
- Dense, compact, pliable, less dry. 8
- Too hard, not brittle 7
- Solid, not brittle 6
- Soft, wet, not easy to decompose. 5
- Dry, brittle, easily decomposed. 4
- Soft, brittle, easy to decompose. 3
- Soft, wet, easy to decompose. 2
- Wet, watery, clearly decomposed 1

### Mold

- None/not seen 9
- There is/looks 1

Source: National Standardization Body, (SNI 01-2346, 2006).
3. RESULTS AND DISCUSSION

3.1. Overview of Kadukang Salted Fish Production "Mr Asep"

Mr. Asep's salted fish manufacturing business is one of the Small and Medium Enterprises (UKM) engaged in the processing of fishery products. This salted fish business is still on a home industry scale, the processing of which is carried out by Mr. Asep himself and assisted by several people as his employees. In the business run by Mr. Asep, there are several types of fish that are salted. However, the most frequent and most abundant type is kadukang fish, because according to producers this kadukang fish is not seasonal fish, so it can be produced continuously.

The raw material used in processing salted fish is Kadukang fish which is usually caught on the South Coast of Pangandaran. This raw material is obtained from Pangandaran native fishermen. In addition to raw materials in the form of fish, this business also requires several materials such as clean water and salt. In one production, Mr. Asep usually produces 50-100 salted fish. The weight per head of kadukang fish ranges from 5 - 10 kg. Processing of salted fish is carried out every day and is usually adjusted to the fishermen's catch.

3.2. Salted Fish Processing Process

The fish processing process carried out by business actors includes the disposal of unused fish parts (stomach contents, gills and head), washing, rinsing, adding salt to the stomach of fish left for 2 days in a closed container usually in a large barrel, fish splitting, and drying fish for 2-3 days by drying the fish directly in sunlight. The flow chart for making kadukang salted fish in Pangandaran can be seen in Figure 2.

The first step in making salted fish is the provision of ingredients, namely kadukang fish obtained from local fishermen or buying at juragan if the amount is large, providing a large amount of crosok salt to give the salted fish taste and suppress the deterioration of fish quality. After that, go to the first stage, which is to remove the innards and cut off the head of the fish. The removal of offal is done to maximize fish processing, because in the gills and stomach of fish many microbes perch, so that later it will accelerate the rottenness of fish.

The next stage is the washing of fish. This washing is done by using clean water repeatedly in running water, this aims to remove the remnants of dirt and fish blood that are still attached to fish meat. Indrastuti et al., (2019) explained that weeding and washing in fish processing aims to remove dirt, scales and mucus as well as blood-colored and colored wall layers.

The next stage is salting fish. Fish salting aims to make the fish salted during the manufacturing process. In addition, the salt used in the manufacture of salted fish is crosok salt. In one production, producers spend around Rp. 2,000,000 on salt to maximize the manufacture of this salted fish. Next, the fish is left for 2 days with a sprinkling of salt on top on a closed large tank container. This process aims to slow down the spoilage of fish meat and give it a salty taste to the maximum.

After the salting process is left for 2 days, the next step is to split the fish into two unseparated parts. Then do the drying process by drying fish in para-para (Figure 5), drying under the hot sun is carried out for 2-3 days depending on weather factors, if the intensity of sunlight is maximum, it only takes 2 days of drying time with a drying time range from 07.00 to 16.00 WIB. The advantage of drying in the sun is that the cost is relatively cheaper.
implementation is easy, while the disadvantages are that the drying time is difficult to determine and the cleanliness is difficult to control (Lukmansyah et al., 2019).

**Figure 2.** The process of making salted fish in Katapang Doyong Pangandaran

**Figure 3.** Salting Process of Kadukang Fish
**Figure 4.** Salting Process and Storage

**Figure 5.** Fish Drying Process
Figure 6. Salted fish that has been dried in the sun

To extend the period of salted fish, Mr. Asep always stores salted fish in the freezer after drying, this is also done to kill bacteria during the drying process, because with direct drying there must be many bacteria or fungi that perch and multiply. So, salted fish are stored in the freezer at temperatures below -3 °C, so that the condition of salted fish is better maintained and lasts longer.

Figure 7. Fish Storage in the Freezer

3. 3. Organoleptic Quality

Organoleptic assessment or sensory assessment is the fastest and easiest method of assessment based on sensing processes (Tarwendah, 2017). Acceptance and understanding of consumers is the goal of this test, so the organoleptic test uses panelists (trained tasters). The
The organoleptic test aims to find out how conscientious the public is in choosing the salted fish to be consumed. Based on the Indonesian National Standards Agency, the organoleptic assessment of salted fish includes points of appearance, smell, taste, consistency, and mold.

The way to choose good salted fish is to look at the color of the meat which is close to the original color of fresh fish, does not smell sour or rancid, has no spots, is not soft, watery or stiff. Based on the average value obtained, the overall organoleptic value meets the requirements for food quality and safety, because the average organoleptic value obtained is 8. As stipulated in SNI, the minimum organoleptic value for salted fish food quality and safety requirements is 7.

The color of a food ingredient has an important role in determining quality and has an appeal to consumers, so that consumers can give the impression of likes or dislikes quickly. The average value of the appearance specifications for the salted Kadukang fish (*Hexanematichthys sagor*) is 8. The appearance of the Kadukang fish is intact, untidy and shiny according to type. The results of the color organoleptic test on salted fish showed that the color of salted fish was clean white and frozen because it was stored in the freezer.

The aroma or smell of fish is a very important indicator in determining the freshness of a fish. According to Wijayanti and Lukitasari (2016) aroma is a parameter that determines salted fish. The average value of the odor specifications for kadukang salted fish (*Hexanematichthys sagor*) gets a value of 8. The aroma or smell that we feel is less fragrant and without additional odors.

The taste of kadukang salted fish is delicious, specific to the type and a little extra flavor. In this processing, kadukang salted fish (*Hexanematichthys sagor*) is processed in a salting and drying process which is then wrapped in plastic or stored in a freezer. For the taste of kadukang fish without additional processing, there is not much additional taste. The average value of the taste specifications for kadukang salted fish (*Hexanematichthys sagor*) gets a value of 7. According to Erawati and Putri (2019), salt can stimulate taste and add a good taste. Furthermore, Tuyu et al. (2014) explained that one of the attractions of salted fish lies in its distinctive taste.

Consistency or it can be called the texture of the meat whose assessment includes solid, compact, pliable, dry, wet, soft, brittle, easily runny and others. Texture factors include hand feel, tenderness and easy chewing (Purwosari and Afifah, 2016). The average value of the consistency specifications for kadukang salted fish (*Hexanematichthys sagor*) gets a value of 9. The consistency obtained is that the fish has a dense texture, compact, flexible and quite dry.

No mold was found because the fish seen were fresh and stored in a safe place, namely in the freezer. Fish wrapped in plastic are also rare to find mold/mushrooms. The average value of mold specifications on kadukang salted fish (*Hexanematichthys sagor*) gets a score of 9 because no mold is visible.

4. CONCLUSION

The process of making this salted fish includes removing unused fish parts (entrails, gills and heads), washing, rinsing, adding salt to the stomach of the fish which is left for 2 days in a closed container, dividing the fish, and drying it for 2-3 days.

Test results The organoleptic value of salted kadulang fish was obtained on average 8, which means it is suitable for consumption according to Indonesian national quality standards.
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