**THE QUALITY OF SALT PRODUCED USING TOOLS MODIFICATION IN TIBERIAS GROUP, BARAT OESAPA KELURAHAN, KELAPA LIMA DISTRICT, KUPANG CITY**

***Indonesian Journal of Fisheries Science and Technology***

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**ABSTRACT**

*People's salt is generally processed using the traditional method with a limited capacity and has poor quality so that it affects the relatively low selling value. Tools modification of cooking is one way that can increase the efficiency of the production process and give better results. The purpose of this research is to find out how to make people's salt, water content, NaCl content, and Total Plate Number value of th e materials used at each stage and the results of the people's salt produced using a tools modified inTiberias group, West Oesapa Village, Kelapa Lima District, Kupang City. Tests for water content and NaCl content were carried out at the exact laboratory of the Kupang State Agricultural Polytechnic****and Total Plate Number in the Exact LaboratoryUnArtha Wacana Christian UniversityKupang.*** *This study used qualitative and quantitative methods and analyzed using comparative descriptive methods. The results of the study show that the water content values ​​ranged from 4.23-6-68%, NaCl levels ranged from 81.97-91.06%, and the Total Plate Number (TPN) in the entire sample from the lowest value to the highest value was < 2 ,5 x 101-84 x 101 colonies/g.*

***Keywords :*** *salt, modification; water content; NaCl; Total Plate Number.*

**INTRODUCTION**

Salt is a chemicalnaturally occurring compound with sodium chloride (NaCl) as the main constituent. Salt has also become an essential commodity that is used by humans as a flavoring agent in the consumption sector and is also used in industry and pharmaceuticals as a raw material. Moh (2014), states that the sources of salt found in nature come from sea water, salt lake water, deposits in the soil, salt mines, and groundwater sources.

The Tiberias group, West Oesapa Village, Kelapa Lima District, Kupang City, is a group that produces salt in the traditional way. The salt cooking process begins by dissolving coarse salt with fresh water which is then filtered, after that the filtered salt solution is cooked for approximately seven hours, the cooked salt is then drained and when dry the salt is stored in a 50 kg capacity sack. While the tools used in the salt cooking process consist of a filter using a bowl and a plastic bag that is placed on a wooden frame and a container for the filtering results, namely a bowl made of used tires, while the cooking utensils use a drum that has been split open and placed in a heated stove made of earth,

Salt production using traditional methods (cooking salt) is not effective enough well the time used is quite long and produce a product that is not good, so there is a need forimprovements in order to increase efficiency in the production process. Modification of tools is one of the activities that can be done to provide solutions for salt production activities. According to Salim (1991) in Nyoman and Sutaguna (2017) modification is a change, while modification according to the Big Indonesian Dictionary is a change or change. Modification carried out in this study is an activity of changing the tools used for the production process by adjusting to the needs without eliminating the actual function.

Modified equipment for salt cooking utensils in the Tiberias group, namely, filtering and collecting equipment, cooking utensils, draining utensils and collecting utensils, and added with drying equipment. The materials used for the manufacture of the modified tool are iron rods that have been painted anti-rust, iron drums that have been cleaned, and aluminum plates. The material used has the ability, can last a long time, is resistant to high temperatures, andhave the ability to conduct heat evenly. While the materials used for the process of filtering the salt solution in the filter are gravel, sand and palm fiber. The materials used are derived from natural materials and have economic value besides that these materials are easy to obtain.

The use of modified tools in the process of making salt in the Tiberias salt group needs to always pay attention to its maintenance so that in the manufacturing process using raw salt raw materials (krosok) dissolved with well water (fresh) and inadequate production site conditions do not pollute the quality of the salt. resulting from. Research conducted by Dawa et al (2021) on people's salt produced using modified cooking utensils from drum plates in the Tiberias group obtained water content of 4.41-5.23%, NaCl content 91.02%, KIO3 79.69 mg/kg , minerals Mg 183,70 mg/100 g and minerals Ca 503,70 mg/100 g. Meanwhile, according to Rismana (2016) states that there is contamination that can be generated from raw materials, purification materials and contamination from the air at the stages of the production process. Insoluble impurities are an ideal medium for microbes to thrive, so they must be removed. Salt raw materials and salt raw material solutions in the range of 30-35% that have not been filtered still contain quite a lot of microbial contamination, namely hundreds of colonies/ml.

Diwa (2018). In his research using krosok salt as raw material, he concluded that the level of NaCl produced in the Tiberias cooking salt processing group was classified in the "Medium" quality category, namely 87.58%, with a water content of 8.06%, insoluble particles of 4.36% and dirt by 3.98%. The quantity of cooking salt in the Tiberias group has an average salt production of 63.58 Kg.

**RESEARCH METHODS**

**Tools and materials**

The equipment used in this study are,filter equipment, storage containers, cooking containers, draining containers (sokal), containers for drying in the form of baking sheets (aluminum), plastic sacks, cloth (chiffon), buckets, dippers, hoses, scoops, shovelsand tools for documentation at the location of making cooking salt, namely stationery and cameras.

The tools used in testing water content, NaCl and ALT levels are analytical balance, petri dish, test tube, test tube rack, volumetric pipette, diluent bottle, colony counter, tweezers, ose needle, stomacher, Bunsen burner, pH meter, magnetic stirer, vortex, incubator, water bath, autoclave, sterile cabinet, refrigerator, freezer, oven, desiccator, burette, erlenmeyer, hot plate, laminar air flow, measuring flask, pipe cup, anaerobic jar, pipetor, water bath, beaker glass, sterile plastic, stirring rod,and clamp.

The materials used in this study were fresh water (wells) and coarse salt (krosok), Salt Filter Solution (SFS), Filtered Salt Solution (FSS), Cooking Salt (CS), and Dry Salt (DS). The chemicals used for the analysis were distilled water, silver nitrate (AgNO3), potassium chromate (K2CrO4), sulfuric acid (H2SO4), sodium hydroxide (NaOH), 70% alcohol, Plate Count Agar (PCA), solution Buffered Peptone Water 0.1% (BPW).

**Research procedure**

This research uses qualitative and quantitative methods. Sampling is done by preparing cleaned plastic jars as containers to store samples and samples taken 3 times out of 10 cooking days, namely, day 2, day 6, and day 10 for testing water content and NaCl content. While the sampling for Total Plate Number (TPN) testing was taken at every stage of the production process carried out by the Tiberias group using the Simple Random Sampling technique.

The production process begins by mixing 20 kg of coarse salt with 100 liters of fresh water in a modified filtering container, the filtered water is accommo dated, after that the water is removed from the holding container using a dipper and poured into a cooking container, then cooked using wood fuel for 1 hour. approximately 5 hours until the salt solution water turns into salt crystals. The crystallized salt is removed using a spoon to be stored in a draining container, the salt crystals that have been drained for approximately 2 hours are removed and dried using a drying pan (aluminum) for approximately 1 hour, then removed and put into a plastic bag with a capacity of 50 Kg then stored in storage.

**RESULTS AND DISCUSSION**

**How to Make Tiberian Salt**

The process of making salt carried out by the Tiberias salt group begins with mixing approximately 18 kg of krosok salt with approximately 100 liters of fresh water (well water) into a bowl that has been perforated into small pieces for the filtering process, the filtered salt solution with a value of salinity 25oBe cooked using a tool made of a drum that has been split in half and placed in an earthen stove, the time required for the salt cooking process is approximately 7 hours. After the solution turns into salt crystals, the salt crystals are removed to be drained to dry, then the salt is stored in sacks with a capacity of 50 Kg.

**Modified Cookware**

Tools modified is a filtering tool, cooking utensil, draining device, and added to a drying container. The filtering device is made using a drum that has been divided into two horizontally in the middle as a container to accommodate then the outer frame is attached using an iron that has been given anti-rust paint after which the tool is cleaned for later use. At the top of the contents of the drum or filtering container, a bowl is placed which on each side has been perforated with small holes such as filtering holes and covered with cloth (chiffon) for the process of mixing coarse salt with fresh water, while in the filtering container there are materials such as sand, gravel, and fibers, each of which is covered with a cloth (chiffon) which function as a solution filter.

The tools modified cooking is made of a drum that is split in the middle vertically into two parts which is used as a container to hold the salt solution to be cooked, then the outside of this container is attached to an iron frame and given anti-rust paint, after that the left side, the right and the back of this tool is coated with an aluminum plate so that the heat of the fire is focused on the cooking utensil containerto speed up the cooking process. The draining device uses a downward cone-shaped basket that is placed on the inside of the drum that has been divided into two and the outside has been attached to a frame, the bottom of the drum is perforated like a hole in a filtering device with the aim of being a place for draining water to come out. The next tool used in the process of making salt is a drying tool that uses an aluminum pan.

|  |  |  |
| --- | --- | --- |
| WhatsApp Image 2021-06-15 at 09.06.36 (2).jpeg | WhatsApp Image 2021-06-15 at 09.06.36 (4).jpeg | WhatsApp Image 2021-06-15 at 09.06.36 (7).jpeg |
| Traditional filter | Tool Traditional cooking | Tool Traditional drain |
| WhatsApp Image 2021-06-15 at 09.36.32 (8).jpeg | 20201010_172835.jpg | WhatsApp Image 2021-06-15 at 09.36.33 (3).jpeg |
| Tool modification filter | Tool modified cooking | Tool Modified drain |
| WhatsApp Image 2021-06-15 at 09.36.34.jpeg | | |
| Tools drying | | |

Figure 1. Equipment Traditional Salt Production and Equipment Modified Salt Production in the Tiberias Group, West Oesapa Village, Kelapa Lima District, Kupang City, East Nusa Tenggara Province.

The specifications of the tools used with each size are that the filter has a length of 75 cm, a width of 59 cm, a height of 55 cm and a cross-sectional depth of 43 cm, while the filtered water reservoir has a length of 88 cm, a width of 58 cm, and a cross-sectional depth of 28 cm. The cooking utensil has a length of 86 cm, a width of 57 cm, a depth of 29 cm, a foot height of 46 cm and a foot width of 67 cm and for a draining utensil it has a cross-sectional depth of 12.2 cm, a width of 57 cm, a height of 42 cm. aluminum pan with a width of 60 cm, a length of 60 cm and a height of 3 cm. While the traditional tools used in the Tiberias group consist of a filter with a size of 1 meter long, 1 meter wide, 90 cm high and a cross-sectional depth of 30 cm while the filtered water reservoir has a depth of 35 cm, a circle of 220 cm, a width of 70 cm and the distance between the filtration to the reservoir is 30 cm. A cooking utensil made of a drum plate with a length of 88 cm, width 56 cm, depth of cross section 12 cm and circle 92 cm. The cooking stove measures 40 cm high, 137 cm long, 60 cm wide and the distance from the drum to the ground is 12 cm. The last draining tool uses woven palm with a depth of 12.2 cm, width 57 cm, height 42 cm and a circle of 185 cm.

The difference that is the advantage of a tool modified compared to an unmodified tool is, in addition tomore efficient in terms of the time needed in the production process and the use of fuel (firewood) is also less, thus reducing the impact on the environment.

**Water content.**

Table 1. Value of Water Content (%) in Krosok Salt (KS), Cooking Salt (CS), and Dry Salt (DS) produced by the Tiberias group, West Oesapa Village, Kelapa Lima District, Kupang City, East Nusa Tenggara Province.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Test | Water content (%) | | | | | | | | |
|  | **KS** | | | **CS** | | | **DS** | | |
| **2** | **6** | **10** | **2** | **6** | **10** | **2** | **6** | **10** |
|  |  |  |  |  |  |  |  |  |  |
| I | 6.92 | 6.47 | 6.56 | 6.11 | 5.79 | 5.89 | 5.13 | 4.34 | 4.58 |
| II | 6.43 | 6.12 | 6.13 | 5.77 | 5.43 | 5.45 | 4.42 | 4.11 | 4.13 |
| Total | 13.35 | 12.59 | 12.69 | 11.88 | 11.22 | 11.34 | 9.55 | 8.45 | 8.71 |
| Average | 6.68 | 6.30 | 6.35 | 5.94 | 5.61 | 5.67 | 4.78 | 4.23 | 4.36 |

Table 1 shows the value of water content in Krosok Salt (KS), Cooking Salt (CS), and Dry Salt (DS) produced by the Tiberias group. The value of water content at each stage in the process of making cooking salt decreases, where in krosok salt which initially has an average water content value between 6.30-6.68% when going through a filtering process using fresh water (well water) and cooked for less more than 5 hours and drained for approximately 2 hours, the value of the water content in the cooked salt decreased to 5.67 % for approximately 1 hour, the value of water content in drying salt decreased to 4.23-4.78% so that when compared with iodized consumption salt quality requirements Indonesian National Standard 3556-2016 and the quality requirements of raw material salt for iodized consumption salt Indonesian National Standard 4435-2017 with a maximum water content of 7%, then krosok salt, cooking salt, and dried salt produced by the Tiberias group are in the range that meets the requirements.The profile of the average water content in the research sample and the requirements of the Indonesian National Standard 3556-2016 and the Indonesian National Standard 4435-2017 can be seen in Figure 2.

Figure 2. Graph of the average water content of Krosok Salt (KS), Cooking Salt (CS), and Dry Salt (DS) produced by the Tiberias group, West Oesapa Village, Kelapa Lima District, Kupang City, East Nusa Tenggara Province. INS 1: INS 3556-2016 and INS 2 : INS 4435-2017

Figure 2 shows the average water content of Krosok Salt (KS), Cooking Salt (CS), and Dry Salt (DS) which are within the range of provisionsINS 3556-2016 and INS 4435-2017 which are below the maximum provision limit of 7%.

The krosok salt used as a base material by the Tiberias group has a low water content value which is thought to be caused by the previously well-done drying process of krosok salt, besides that, the storage of krosok salt in an open place and also close to the cooking furnace can provide opportunities for salt. evaporates, causing the water content to decrease.Saksono (2002), stated that hThis is because it is treated in an open condition, so it is greatly influenced by the conditions of the surrounding environment. With changes in environmental conditions that turn drier, as a result some of the water that was originally bound to the salt will be released back into the air.

The value of water content in cooking salt has met the standard (INS), this is presumably in addition to raw materials that have low water content but also due to the use of modified cooking utensils, namely using a plate.the surrounding drum has been covered by an aluminum plate so that the heat generated is focused on the cooking utensil container which causes the cooking time to be faster and by a very high temperature so that the water content that is evaporated by the heat into the air is more, and the use of a draining device for approximately 2 hours is sufficient to produce a low water content and fall into the category of INS requirements. As for the water content in the sun-dried salt has a low value, allegedly due to the use of salt drying equipment (pan) made of aluminum so that the heat obtained from sunlight can be delivered evenly on each side of the drying equipment and the air pressure around the drying location so that able to evaporate water quickly. Sumardi and Sinawang (2001), explained that the drying process will cause the water vapor content of a material to evaporate so that the water content of the material decreases over time. Likewise explained byLeni (2002),pThe heat will be delivered to the water in the food to be dried and the water will evaporate and be moved out of the drying.

Research conducted by Diwa (2018), stated that the water content produced in the Tiberias cooking salt processing group was 8.06%. Likewise, research conducted by Dawa, et al (2018), on the value of water content for cooking salt using krosok salt as raw material is 11.33% and the water content value for cooking salt using 7% pond soil ash as raw material. The research conducted by Tse (2021) stated that the highest water content was in Household I, which was 6.77% and the lowest average value of salt water was found in Household V, which was 5.72%. When compared with current research, the value of water content using modified tools is quite good or is included in the Indonesian National Standard (INS) category.

**Sodium Chloride (NaCl) Content**

Table 2 shows the value of NaCl content in krosok salt used as a basic ingredient, cooked salt, and salt from drying. The value of NaCl content in the sample at each stage has increased, where the krosok salt used as a basic ingredient in the production process has an average NaCl value ranging from 81.97-82.19% and the cooked salt has an average NaCl value of ranging from 85.4-87.82% and the value of NaCl in salt that has been dried has an average value ranging from 90.48-91.06%.

When compared with research that has been done previously by Diwa, (2018) with the value of salt NaCl levels in the Tiberias Group, namely. 87.58% and that was carried out by Dawa, et al (2018) with the value of NaCl content for cooking salt using krosok salt as raw material, which is 78.16% and the value of NaCl content for cooking salt using raw material from pond soil ash is 74.45%. Research conducted by Tse, (2021) regardingQuality Analysis of Traditional Cooked Salt in Oebelo Village, Central Kupang District, Kupang Regency stated that the average value of salt NaCl content was 86.77%.

Table 2. Values ​​of Sodium Chloride (NaCl) (%) in KS Krosok Salt, Cooking Salt (CS), and Dry Salt (DS) produced by the Tiberias group, West Oesapa Village, Kelapa Lima District, Kupang City, Est Nusa Tenggara Province

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test** | **NaCl content (%)** | | | | | | | | |
| **NO** | | | **CS** | | | **DS** | | |
| **2** | **6** | **10** | **2** | **6** | **10** | **2** | **6** | **10** |
| I | 82.16 | 83.31 | 82.74 | 85.92 | 88.23 | 86.47 | 90.88 | 91.42 | 91.27 |
| II | 81.78 | 82.49 | 81.56 | 84.88 | 87.41 | 85.32 | 90.07 | 90.69 | 90.11 |
| Total | 163.94 | 165.8 | 164.3 | 170.8 | 175.64 | 171.79 | 180.95 | 182.11 | 181.38 |
| Average | 81.97 | 82.9 | 82.15 | 85.4 | 87.82 | 85.90 | 90.48 | 91.06 | 90.69 |

The low value of NaCl content in krosok salt which is used as a basic ingredient in the salt production process in the Tiberias group is thought to be due to the raw material of krosok salt which was previously processed in the traditional way and the condition of the krosok salt storage area which is quite open so that the presence of impurities is quite high, both impurity materials in soluble materials such as mud, sand, and dust, as well as dissolved impurities like MgSO4, CaSO4, MgCl2, KCl resulting in a low value of NaCl content in krosok salt.

NaCl content in cooked salt and dried salt increase at each stage however, when compared with the requirements of the Indonesian National Standard, the NaCl content is still relatively low. This is presumably due to the presence of impurities that dissolve during the krosok salt filtering process, and the time used in the draining and drying process is not too long, which is only 1 hour so that it affects the value of NaCl levels in cooked salt and salt that is dried in the sun is relatively low. The salt produced from the evaporation and crystallization process of seawater is known as krosok salt, this krosok salt has a low quality, namely the average NaCl content is only 85% and contains impurities. The impurities in the sample are mostly Ca and Mg compounds and trapped mud in dried salt crystals. These impurities cause the appearance of the salt to be browned because of the large amount of mud contained in it. Meanwhile, impurities of Ca and Mg make the taste of salt more bitter (Saksono, 2002). It is known that the NaCl content of salt is not solely determined by the salinity and NaCl content of raw water but is also influenced by several factors such as sea water quality, impurities and manufacturing processes (Hidayat, 2011 in IINSa, 2014). such as MgSO4, CaSO4, MgCl2, KCl and soil impurities (Sumada et al., 2016). impurities and the manufacturing process (Hidayat, 2011 in IINSa, 2014). such as MgSO4, CaSO4, MgCl2, KCl and soil impurities (Sumada et al., 2016). impurities and the manufacturing process (Hidayat, 2011 in IINSa, 2014). such as MgSO4, CaSO4, MgCl2, KCl and soil impurities (Sumada et al., 2016).

Figure 3. Average score graph NaCl in Krosok Salt (KS), Cooking Salt (CS), and Dry Salt (DS) produced by the Tiberias group.

**Total Plate Number (TPN) Test**

Table 3 presents the TPN value in well water used as a solvent for krosok salt, which is quite high, which is between 25 x 101-58 x 101 colonies / ml, the presence of these microbes is thought to be due to the well water used is not clean or has been polluted so that there are microbes that develop. or live. Some human activities also affect the quality of water sources, such as industrial, agricultural and household activities (Effendi, 2003). This is a major problem related to water pollution because groundwater quality is affected by seepage of household wastewater (Marsono, 2009).

TPN value in cruciferous salt < 2.5 x 101colonies/g, in other words, there are microbes that live in krosok salt but in small quantities, this indicates the presence of microbes that are able to live because it is suspected that there are factors that support microbial growth. This is in line with the previous test where the water content in krosok salt has a fairly high value when compared to cooking salt and drying salt and the NaCl content in krosok salt is low. In addition, krosok salt as the basic ingredient used by the Tiberias group was initially processed in a traditional way and the conditions of the storage area that were quite open and grounded were one of the factors that could cause high impurities in krosok salt so that it became a medium for microbial growth.

Table 3. ScoreTotal Plate Number onwell water, krosok salt, saline solution, filtered saline solution, cooking salt, and drying salt produced by the Tiberias group

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample** | **Pick Up Day** | **Dilution** | | | | **Total ALT**  **colony/g & colony/ml** |
| **10-1** | **10-2** | **10-3** | **10-4** |
|  |  |  |  |  |  |  |
| WW | 2 | 56 | 12 | 0 | 0 | 56 x 101 |
| 6 | 25 | 11 | 0 | 0 | 25 x 101 |
| 10 | 3 | 0 | 0 | 0 | 58 x 101 |
| KS | 2 | 3 | 0 | 0 | 0 | < 2.5 x 101 |
| 6 | 4 | 0 | 0 | 0 | < 2.5 x 101 |
| 10 | 1 | 0 | 0 | 0 | < 2.5 x 101 |
| SS | 2 | 84 | 30 | 5 | 0 | 84 x 101 |
| 6 | 61 | 23 | 0 | 0 | 61 x 101 |
| 10 | 63 | 20 | 4 | 0 | 63 x 101 |
| FSS | 2 | 59 | 9 | 0 | 0 | 59 x101 |
| 6 | 55 | 11 | 0 | 0 | 55 x101 |
| 10 | 56 | 11 | 0 | 0 | 56 x 101 |
| CS | 2 | 0 | 0 | 0 | 0 | < 2.5 x 101 |
| 6 | 0 | 0 | 0 | 0 | < 2.5 x 101 |
| 10 | 0 | 0 | 0 | 0 | < 2.5 x 101 |
| DS | 2 | 4 | 0 | 0 | 0 | < 2.5 x 101 |
| 6 | 6 | 0 | 0 | 0 | < 2.5 x 101 |
| 10 | 3 | 0 | 0 | 0 | < 2.5 x 101 |

|  |  |  |
| --- | --- | --- |
| D:\New folder\20210612_204338.jpg | D:\New folder\20210612_204358.jpg | D:\New folder\20210608_180739.jpg |
| WW | KS | SS |
| D:\New folder\20210612_205957.jpg | D:\New folder\20210612_204321.jpg | D:\New folder\20210612_204358.jpg |
| FSS | CS | DS |

Figure 4. The results of the microbial contamination test on Well Water (WW), Krosok Salt (KS), Salt Solution (SS), Filtered Salt Solution (FSS), Cooking Salt (CS), and Dry Salt (DS) in Exact Laboratory **Artha Wacana Christian University, Kupang**

Rismana (2016), salt raw materials and 30-35% salt raw material solutions that have not been filtered still contain quite a lot of microbial contamination, namely hundreds of colonies/ml. This high contamination can also be caused by bacteria that can grow and adapt well to high salt levels, namely bacteria that are classified as extreme halophiles (Rini et al, 2017). These bacteria do not require high salt content to grow, but can grow in a salt solution (Radji, 2004).

The salt solution has a higher TPN value compared to well water, which is in the range of 61 x 101-84 x 101 colonies/ml. This is presumably due to the presence of a lot of dirt in the filtering solution where during the implementation in the field it was seen that the filtering solution was very dirty due to the process of dissolving krosok salt in a condition that was still dirty with well water that was also not clean or had been polluted so that there were microbes that grew. Because of this, groundwater is very at risk of being contaminated with inorganic and microbial materials (Suryana, 2013) and well water is water that is easily polluted because it is close to the ground surface (Warsito, 1994).

While in the salt solution filtered the TPN value decreased, which was around 55 x101-59 x101 colonies/ml, this is thought to be due to a filtering process that uses cloth (chiffon) as a coating and materials such as sand, gravel and palm fiber so that the TPN value is not as much as the filtering solution but the presence of microbes is thought to be due to the filtering process. contamination occurs both from tools, environmental conditions and also people as implementers in the filtering process. According to Rismana (2016), these contaminants can be generated from raw materials, purification materials and contamination from the air at the stages of the production process.

The TPN value of cooked salt and sun-dried salt was below 25 colonies/g. This is presumably due to the heat generated from the fire and sunlight during the cooking and drying process, resulting in microbes not being able to thrive or live. This is also in line with the results of previous studies, namely the results of testing the water content of cooking salt and drying salt which have a low water content value and contain high levels of NaCl so that microbes are not easy to live. Added by Hery (2011), that in drying one of the control of microorganisms that can be done is to reduce the water content. Because living microorganisms need water for growth, the amount of water in food determines the types of microbes that have the opportunity to grow.

**CONCLUSION**

Based on the study, it can be concluded that the process of making salt carried out by the Tiberian salt group begins with the process of washing krosok salt with fresh water, filtering, the filtered salt solution is cooked using a tool made of a drum that has been split into two and placed in an earthen stove, The time required for the salt cooking process is approximately 5 hours. After the solution turns into salt crystals, the salt crystals are removed to be drained to dry and then the salt is stored in sacks.

The results of the study were the water content values ​​ranged from 4.23 to 6.68%, NaCl levels ranged from 81.97-91.06%, and the Total Plate Number (TPN) in the entire sample from the lowest value to the highest value was < 2 ,5 x 101-84 x 101 colonies/g.

**ACKNOWLEDGEMENT**

1. Artha Wacana Christian University for the recommendation and support funding through the University Research Scheme.
2. Faculty of Fisheries and Marine Science Diponogoro University as the executor of activities.

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