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SANITATION OVERVIEW OF SALT PROCESSING IN OEBELO VILLAGE, KUPANG REGENCY

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Abstract

Sanitation plays a crucial role in salt processing to ensure the quality and safety of salt for consumer consumption. Salt processing conducted under high sanitation standards has a positive impact on the quality of the salt produced. This study aims to investigate the sanitation condition of salt processing in Oebelo, Kupang Regency. The research design is descriptive observational with a survey approach. The sample size consists of 31 salt-processing household in Oebelo. The result of the study indicate that all 31 salt production facilities in Oebelo Village, Kupang Regency, meet the health standards for salt processing sanitation. The variables that fall under category of meeting health standards include location and enviroment; production equipment; water supply/facilities for water provision; employee health and hygiene; maintenance anda sanitation hygiene programs; and storage. The variables categorized as not meeting health standards are building and facilities; and hygiene and sanitation facilities and activities.

Keywords: Sanitation, Salt Processing, Enviromental Conditions

Introduction

Sanitation is the monitoring of various physical enviromental factors that affect humans, especially those that have an impact on health, physical development, or survival (WHO, 2016). Sanitation can also be defined as efforts to prevent disease by breaking or controlling factors that contribute to the chain of disease transmission (Sucipto, 2019).

Food is anything that comes from biological sources such as agricultural, plantation, forestry, livestock, aquatic, and water, whether processed or unprocessed, intended for human consumption as food or drink, including food additives, food ingredients, and other substances used in preparation, processing, and/or manufacture of food and beverages. Food sanitation is an effort to create and maintain healthy and hygienic food conditions that are free from biologicak, chemical, and other contaminants (UU RI, 2012).

Salt is a chemical compound whose main component is sodium chloride and may other elements, such as magnesium, calsium, iron, and pottassium, eith or withot added iodine (PERPRES, 2020). Salt is one of the necessities that complements food requirements and is a source of electrolytes for the human body (Hoiriyah, 2019). Salt is an important commodity as a food ingredient and industrial raw material. Salt also acts as a source of electrolytes for the human body, making the production, supply, procurement, and distribution of salt very important. This needs to be done in order to support public health through consumption programs, increase the income and welfare of salt farmers, and meet domestic industrial needs (Pakaya, et al 2015).

East Nusa tenggara is an archipelagic province that relies on its natural resources from the sea. One of these resources is the use of seawater as a rawa material for salt, as practiced by the people of

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Oebelo in Kupang Regency. The Oebelo Community, who live along the Timor Raya road, work as fine salt entrepreneurs. However, the process of processing coarse salt into fine salt for sale is still simple and manual. Manual labor in the salt processing industry is a source of pollution, namely air pollution caused by smoke and dust particles from burning wood in salt cooking stoves (Romeo, et al., 2025).

The traditional salt cooking process involves preparing raw salt/krosok and fresh water, which are placed in a plastic bucket with holes in the bottom. The plastic bucket is placed on top of plastic sack, the covered with a plastic sack filled with sea sand, followed by another plastic sack at the bottom. The filtering process takes 1 hour. After that, the filtered water is poured into a container (drum), and the cooking process lasts for 6-7 hours. After that, the cooked salt is lifted and drained on a draining device (sokal), which taken 5 hours. Next, the dried salt crystals are placed into 50 kg bags dan stored next to the cooking furnace to ensure the salt crystals are completely dry (Dawa et al., 2021).

Sanitation plays an important role in salt processing to ensure the quality and safety of consumption for consumers. The quality of salt is determined by the sanitation of its processing. Several aspects that need to be considered in salt processing include the location and production enviroment, the condition of buildings and facilities, salt production equipment, the supply of clean water used, hygiene dan sanitation facilities and activities, worker health, process control, salt labeling, supervision by those responsible, and product reacall if there are damaged product, recording and documentation of salt products produced, and training for workers or employees (Perka BPOM, 2012).

Based on initial observations conducted at salt cooking house in Oebelo village, tha author found that there were poor sanitation issues such as building conditions that did not meet health standards, such as cramped production rooms, dirt floors, dusty ceilings, and poor production equipment conditions where the equipment was not maintained and did not guarantee effective salt processing sanitation, productions equipment still uses simple tools.

Method

This study uses descriptive observational research with a survey design. The population and sample in this study are all salt houses in Oebelo salt houses, totaling 31 salt houses. The data sources are primary data obtained through observation and interviews, as well as secondary data that support the research. The data collection instrument is a checlist. The data collection techniques are observation and interviews. The data analysis in this study is descriptive analysis.

Results

Research Variables

Table 1 Location and production enviroment conditions at the Oebelo Village salt house in 2025

Variabel	Frequency	Percentage (%)
Location and Production	31	100%

Based on table 1, it is known that 31 (100%) salt houses meet the health requirements for location and production enviroment.

Table 2 Building and facility condition at the Oebelo Village salt house in 2025

Variabel	Frequency	Percentage (%)
Building and facility	31	100%

Based on table 2, it is known that 31 (100%) salt houses not meeting the health requirements for building and facility condition.

Table 3 Production equipment at the Oebelo Village salt house in 2025

Variabel	Frequency	Percentage (%)
Production equipment	31	100%

Based on table 3, it is known that 31 (100%) salt houses meet the health requirements for production equipment.

Table 4 Water supply or water distribution system at the Oebelo Village salt house in 2025

Variabel	Frequency	Percentage (%)
Water supply or water distribution system	31	100%

Based on table 4, it is known that 31 (100%) salt houses meet the health requirements for water supply or water distribution system.

Table 5 Hygiene and sanitation facilities and activities at the Oebelo Village salt house in 2025

Variabel	Frequency	Percentage (%)
Hygiene and sanitation facilities and activities	31	100%

Based on table 5, it is known that 31 (100%) salt houses not meeting the health requirements for hygiene and sanitation facilities and activities.

Table 6 Worker health and hygiene at the Oebelo Village salt house in 2025

Variabel	Frequency	Percentage (%)
Worker health and hygiene	31	100%

Based on table 6, it is known that 31 (100%) salt houses meet the health requirements for worker health and hygiene.

Table 7 Maintenance and hygiene and sanitation program at the Oebelo Village salt house in 2025

Variabel	Frequency	Percentage (%)
Maintenance and hygiene and sanitation programs	31	100%

Based on table 7, it is known that 31 (100%) salt houses meet the health requirements for maintenance and hygiene and sanitation program.

Table 8 Storage at the Oebelo Village salt house in 2025

Variabel	Frequency	Percentage (%)
Storage	31	100%

Based on table 8, it is known that 31 (100%) salt houses meet the health requirements for storage.

Discussion

1. Location and production enviroment conditions

The location and production environment are where the buildings and productions are located. Based on the result of the assessment of the location and production environment variables in 31 salt houses in Oebelo Village, it is known that these 31 salt houses are categorized as meeting the health and hygiene requiments for salt processing.

This salt house is located on the side of a highway in a lowland area, which generally provides easy access fot the transportation of raw materials and distribution of finised products. Despite its proximity to the highway, the production facility remains clean. The production environment is free from pollution and is not located near sources of pollution, such as landfills, sewage channels, livestock pens, or other industries that produce smoke, dust, or hazardous chemicals. The location complies with the principle that food production must be carried out in an area that does not pose a risk of physical, chemical, or microbiological contamination. In addition, this salt house has good road access, facilitating the mobility of raw materials and distribution of products without causing cross-contamination.

The results of this study are in line with Martin research which states that food processing locations are located far from areas that can cause pollution (odors, dust, smoke, dirt).

2. Building and facility condition

Buildings and facilities are the overall construction of production buildings and all infrastructure used in the production process, including the layout of facilities and building conditions that support smooth operations and ensure the cleanliness and health of salt processing. The buildings and production facilities used guarantee that food products are free from physical, chemical, and biological contamination.

Based on the results of research conducted in 31 salt houses in Oebelo Village, it was found that these 31 salt houses were categorized as not meeting building and facility health requirements.

In general, building construction has not been designed to support hygienic food production processes. Salt houses are made of rough building materials or are not tightly sealed, and the floors are difficult to clean. The walls and ceilings are covered with cobwebs and dust, and are susceptible to damage if continuously exposed to water and unprotected from dirt or insects. The roofs of production houses are made of layers of palm leaves (palm trees). The doors of the buildings are closed using tarpaulins, woven materials, wood, and some are left open. There are no lights in the salt houses, so there is insufficient light in the rooms. Lighting is provided by natural light. Supporting facilities such as hand washing stations are not available, making it difficult for workers to maintain personal hygiene during the production process.

This study is in line with research conducted by Marwanto et al 2021. The results of the study indicate that the condition of the buildings and facilities do not meet the requirements because the buildings are cramped, difficult to clean, the ceilings are not well maintained, dirty, and dusty, and the ventilation is not equipped with screens, causing dust.

3. Production equipment

Production equipment refers to various tools used to produce or process something. Based on the results of research conducted at 31 salt houses in Oebelo Village, it was found that the salt production equipment meets health requirements.

The equipment used in the salt production process, such as large iron pans, stirrers, sieves, draining tables, and packaging, is made of rust-free materials that do not react with food and are easy to clean. The materials used are safe, and the wood is well-maintained and free of mold (if used to a limited extent). All equipment is clean and well maintained and is used specifically for salt production. There is no use of rusty, broken, or damaged equipment that could cause physical or chemical contamination of the product. After use, the equipment is cleaned with clean water. Equipment that comes into direct contact with salt also does not absorb moisture or odors, so the quality of the salt is maintained. Equipment washing is carried out regularly, both before and after the production process. Cooking equipment is protected by cleaning, washing, and rinsing. Single-use cooking utensils are not reused. In this case, sacks used to store coarse salt from salt ponds are not reused to store fine salt produced.

This study is in line with research conducted by Harnatasya et al 2025, which found that production equipment was in good condition, clean, and rust-free. All equipment that comes into direct contact with food is made from non-toxic, corrosion-resistant materials that are easy to clean and do not absorb substances that could cause food contamination.

4. Water supply or water distribution system

Water supply refers to the provision of water needed to carry out the production process, both for direct product processing, hygiene, and other purposes.

Based on the results of research conducted in 31 salt houses in Oebelo Village, the water supply or water provision facilities are classified as meeting health requirements.

The water source used comes from bore wells and closed reservoirs to prevent contaminants from entering from the surrounding environment. In addition, the production houses also have connections to PDAM clean water, which is used primarily for washing equipment, sanitizing production areas, and cooking salt. The water used for the entire production process, from washing equipment and dissolving coarse salt to the final stage of cleaning the salt, is always ensured to be clean, colorless, odorless, and free of hazardous substances. The water supply system is equipped with closed pipes so that the water is not contaminated when stored or used. The availability of water is always sufficient to carry out the production process.

The results of this study are in line with research conducted by Hunafa et al 2022, which found that there is sufficient clean water to meet production needs.

5. Hygiene and sanitation facilities and activities

Facilities and sanitation are tools or equipment provided to support personal and environmental hygiene, such as hand washing stations, toilets, trash bins, and waste disposal systems. Meanwhile, hygiene and sanitation activities are actions or efforts undertaken to maintain and improve hygiene and health, both for individuals (hygiene) and the environment (sanitation), in order to prevent disease and improve quality of life.

Based on the results of a study conducted in 31 salt houses in Oebelo Village, it was found that the salt houses did not meet the requirements for hygiene and sanitation facilities and activities.

There were no hand washing facilities for workers, so workers could not maintain optimal hand hygiene before or during the production process. In addition, there were no trash bins around the production area. Trash was burned around the production site or combined with household trash and then burned, leaving combustion residues.

This study is in line with research conducted by Larna 2022, which found that trash bins inside the production area were not made of strong, tightly sealed materials.

6. Worker health and hygiene

Employee health and hygiene are efforts to maintain the cleanliness and health of workers and the work environment to prevent illness and workplace accidents, including personal hygiene practices.

Based on the results of the study, workers at 31 salt houses in Oebelo Village meet health and hygiene requirements.

The workers are in good physical condition and none of them suffer from open skin diseases, respiratory tract infections, or other disorders that could potentially contaminate the products. At work, workers wear clean clothes, do not smoke, eat or drink in the production area. In general, no unhygienic behavior was found among workers and their clothes were clean.

This study is in line with research conducted by Rezki 2020, which found that employees involved in production were healthy and not suffering from infectious diseases. Employees wore clean clothes but did not wear aprons, head coverings, or masks.

7. Maintenance and hygiene and sanitation program

Maintenance and sanitation programs are a series of structured actions and efforts to maintain the cleanliness of individuals, the environment, equipment, and materials used.

Research conducted at 31 salt houses in Oebelo Village found that all of these salt houses meet health requirements for maintenance and sanitation hygiene programs.

This is because no toxic substances/pesticides were found at the site. In addition, no preservatives were used in the salt processing, from salt collection in the ponds to cooking and storage. All processes used natural ingredients, namely water, salt, and old fruit heads, which were cut and stored in salt water before cooking to ensure that the salt produced was clean.

This study is in line with research Harnatasya, et al., 2025 that the absence of domestic animals in the production area indicates control over potential biological contamination, emphasizing the importance of environmental cleanliness and pest control.

8. Storage

Storage is the activity of organizing, storing, and managing products or finished goods that have been produced in a room or other storage facility before being distributed to customers or sold to the market.

Based on the results of research in 31 salt houses in Oebelo Village, it was found that the storage of processed salt products met health storage requirements. Based on observations and interviews, the final salt product is stored in clean sacks and also in woven containers for sale at the market. Raw materials and finished products are stored separately.

This study is in line with the research by Fadhila et al 2024, which found that the storage of production materials and finished products is separate. Materials for cleanliness and health are stored in different places.

Conclusion

Based on the results of the research and discussion, conclusions can be drawn regarding salt processing sanitation in Oebelo Village, namely that the variables that meet the health requirements for salt processing sanitation in Oebelo Village are location and environment; production equipment; water supply/water provision facilities; employee health and hygiene; maintenance and sanitation hygiene programs; and storage. Meanwhile, the variables that do not meet the requirements for salt processing

sanitation in Oebelo Village are building and facilities; as well as sanitation hygiene facilities and activities.

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