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The Status of Implementation of Good Manufacturing Practices (GMP) Shredded Fish Production in UMKM Az-Zahrah, Makassar

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Abstract. Good manufacturing practices (GMP) describes the requirements that an industry should follow throughout the production process starting from sorting raw materials to handling final products. The purpose of this research is to disclose each phase of GMP in making shredded fish and to assess the status of the practices implemented by the UMKM Az-zahrah in producing its product. This descriptive study is conducted by doing interview with owner followed by observation and documentation of all activities related to the production process in order to assess the status of GMP applied by the UMKM Az-zahrah. In assessing the status, we referred to Permenperin RI No.75 / M-Ind / Per / 7/2010 and KBPOM regulation no. HK 03.1.23.04.12.22007 Year 2012. The findings indicate some deviation occurred when UMKM Az-zahrah implemented it, those are (1) there is a pet in production room (2) production employees are not yet wearing work uniform (3) production room has directly access to toilet (4) there is no health label about health and nutritional claims. The status of applied GMP in the UMKM Az-zahrah is at D level (less good) with rating IV.

1 Introduction

The existence of Micro, Small and Medium Enterprises (MSME) has a positive impact on the society's economy because MSMEs can grow and develop everywhere, from cities to villages. The increase of MSME can directly absorb labor so as to reducing unemployment rate; as the result, it will increase the economy of society. However, there is the fundamental problem often faced by MSME, such as there is limited capital support, have no skilled labor and have low standardized product. Another problem is there are many of MSME are labeled with no SNI standard since most of MSME entrepreneurs assume that standardization is not necessary. Not all MSME products in the market have been labeled with Indonesian National Standard (Standar Nasional Indonesia/SNI). Consequently, even though the products are qualified for export but they cannot compete with others because of no standard certification for MSME product.

In order to improve MSME competition with larger home industry in the food industry, they should increase consumer confidence by growing the awareness of producers and employees about the importance of hygienic food production process and responsible for consumer safety. Indonesian government through the Food and Drug Supervisory Agency sets out a guideline for Good Food



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Production for Household Industries (CPPB-IRT), known as Good Manufacturing Practices (GMP), to improve the quality of produced food products. This guideline is not only ruling the nutritional ingredients but also the safety and viability of producing the products [1,2].

One of the processed food products that are popular is shredded fish produced by UMKM Az-Zahrah. The UMKM Az-Zahrah is one of the MSME producing processed food established since 2006 and it still exists until now. One of the problems faced by the MSME is having no SNI label for its product.

The problems faced by the MSME such as knowledge, technology, and cost, have caused the product can only be marketed locally, that is in South Sulawesi. Attempting to market its product in national and international scale (export) are limited because of not meeting with required quality requirements. Therefore, it important for UMKM Az-Zahrah to implement GMP status in producing shredded fish. This application is important for all parties, in particular, to protect MSME, and to guarantee that food is safe for the community or consumers.

To the best of the author's knowledge, this is the first study in UMKM Az-Zahrah to evaluate the GMP status. Therefore the objectives of this study are to identify the application of GMP to the production of shredded fish and to assess the application status of GMP in UMKM Az-Zahrah.

2. Material and Method

This research was conducted at UMKM Az-Zahrah located in Patingaloang Village, Ujung Tanah Subdistrict, Makassar. The research method used in this study is descriptive research method. Descriptive research means describing or illustrating the existing phenomena, both natural phenomena or human engineering [3].

Research Stages

After assessing CPPB-IRT application status, CPPB-IRT Rating document was obtained. At this stage, we conducted observation, interviews, and documentation of all activities related to the production process. An observation was conducted to observe closely the activity and behavior, environment, and general picture of the UMKM location. An in-depth interview is conducted with the owner. In assessing the status, we adopt Permenperin RI No.75 / M-Ind / Per / 7/2010 and KBPOM regulation no. HK 03.1.23.04.12.22007 Year 2012. The data obtained is processed by qualitative and quantitative description.

3. Results and discussion

3.1. Temperature UMKM Az-Zahrah Shredded fish Production

The UMKM Az-Zahrah is a local small business entity that is established to manage the processed food of shredded fish. The UMKM is located in Patingaloang Village, Ujung Tanah Sub district, Makassar, and it was incorporated in 2006. The production capacity of shredded fish on average is 500 kg per day. The number of employees is 25 and they are residing at around the industry and have the low-level education. Therefore it is important the UMKM conduct training about the processing procedures of shredded fish for its employees so that the procedures of GMP can be implemented maximally.

3.2. Status of Application Good Manufacturing Practices (GMP)

Following is the stages of the process production of shredded fish at UMKM Az-Zahrah: (1) sorting of raw materials, (2) weeding (3) boiling, (4) initial pressing, (5) early stage shredding, (6)) Frying, (8) second stage pressing, (9) second stage shredding, (10) refrigeration and (11) packaging. Based on the observations conducted in site (UMKM Az-Zahrah).

3.3. Location and Production Environment

The location of the UMKM Az-Zahrah is close to the fish auction. The site is also located in a densely populated residential area. As a result, household waste and poor sanitation around it may contaminate the product.

3.4. Building and Facilities

Factory building, including its facilities in the UMKM Az-Zahrah is made of materials that are easy to be maintained. The outside of the building, such as the street, parking lot and yard are well managed. The surface of the floor, wall, roof/ceiling, and ventilation is fine and non-slippery. It is also easy to wash the dirt and grime off the walls. The interior of walls is painted with light colour, easy to wash the dirt, durable and not flaking. Interior lighting design in every room is good since the rooms have enough lights from both sunlight and electricity. Doors and windows are made of stainless, waterproof material, smooth surface and easy to clean. Drainage and sewerage liquid system are sufficient and strong enough so that the liquid waste can flow smoothly. It is also easier to clean it so that rodents and other insects cannot have access to enter the room. The room is also equipped with a sink, hand soap, and dryers for employees to keep clean their hands. It has a bathroom that is directly related to the treatment room, however, it is easy to clean and enough wash water.

3.5. Production Equipment

All appliances such as plastic baskets, trays, buckets, and pans that are used in the process of production are clean. Before and after using the appliances, an employee will brush and wash them with soap and then dry them. Such actions may reduce contamination into the product. All appliances are placed in a room where processing and packing activities are done. The equipment used for production is conveniently designed based on its usefulness and it is regularly cleaned. The UMKM also uses an accurate scale that is commonly used to weigh food.

3.6. Water Supply or Water Supply Facility

Water used in the production process at the UMKM Az-Zahrah is pumped and flowed to water reservoirs through pipes/hoses. Thus, the water is precipitated first in the sterile container before using it into the production process. In addition, the water used is available in sufficient quantities for production activities.

3.7. Hygiene and Sanitation Facilities and Activities.

At the UMKM Az-Zahrah, cleanliness and sanitation of processing area are well maintained. Similarly, the practice of worker hygiene, clothing and hand washing is in good condition, although still in a simple condition. However, there is a toilet close to the production area.

3.8. Health and Employee Hygiene

Health and hygiene employees aim to ensure that employees involved in the processing process are not a source of contamination. At UMKM Az-Zahrah the condition of production employees is always clean and healthy, in addition to employees at UMKM is also always wash hands when starting to process, after handling raw materials and equipment and out of the toilet. Employees also work with a serious attitude (not eating, drinking or spitting indiscriminately). In the UMKM there is personnel responsible for health and hygiene. However, the UMKM has not yet provided the special uniforms imposed by employees.

3.9. Maintenance and Hygiene and Sanitation Program

Maintenance and hygiene and sanitation programs aim to maintain and apply sanitation to production facilities such as buildings, machinery or equipment, pest control, waste handling and others. If any pet is not justified to roam around the production room because it can cause contamination. Production space at UMKM Az-Zahrah there is a pet that is a kind of bird that is in a cage that is placed near the

wash site. The presence of waste in the production environment is immediately discarded as well as conducting a program of hygiene and health on a regular basis. In addition, the chemicals used in the production are used according to the rules and stored in containers labelled appropriately.

3.10. Storage

In order to keep foodstuffs such as raw materials, supplementary materials, and final products from damage, a manufacturer should have a good storage system. The UMKM Az-Zahrah has good storage system to keep all materials from damage. The materials have been stored in a clean room. Foodstuffs and packing materials are stored separately from the final product, in a clean and bright room [2].

3.11. Process Control

The purpose of controlling the production process on P-IRT is to produce quality food products and provide benefits for consumers so it is expected that all materials used should be good not to harm consumers. At the UMKM Az-Zahrah, has a record of raw materials that have been damaged, hazardous materials and food additives that meet the requirements. In the MSME using special food packaging materials and food additives used are given a special marker. In the MSME has a food production flow chart.

3.12. Food Labeling

At the UMKM Az-Zahrah, the label used includes the product name, ingredient composition, net weight, expiration date, production code, P-IRT number, and name and address of the UMKM. However, the label has not included health claims and nutritional claims.

3.13. Supervision by Responsible Person

Every industry should have someone who is responsible for the production process so that the quality of food products can be controlled properly. Similarly, there is a person in charge (PIC) that is responsible for that activity at the UMKM Az-Zahrah. A PIC has a certificate of food safety instructor who conducts internal supervision and correction action in MSME on a regular basis.

3.14. Product Withdrawal

A company can withdraw its product from selling if there is found any problem with the product. One reason for the withdrawal of food products is safety problem such as perhaps the product will cause illness or poisoned to consumers if they consume the product. As a consequence, it is very important to follow a guideline that the Indonesian Government has ruled about how to process the food product until it is distributed to society. Similarly, the UMKM Az-Zahrah will withdraw the shredded fish products if the products are not safe to be eaten.

3.15. Recording and Documentation

This activity is very helpful to owners to record what problem faced with regard to product quality. It also important to record production process, materials used, expiration date, and distribution system. There is a bookkeeper at the UMKM Az-Zahrah that is responsible to record production activities such as calculate materials used, the amount and date of production testing, storage and distribution. In addition, production documents are always updated, easy to store and easy to find.

3.16. Employee training

A P-IRT leader and employees must have the skills and knowledge of sanitation in the process of processing food products in order to avoid problems that could be harmful to both owners and consumers. There is a safety training program held at the UMKM Az-Zahrah to train employees about that.

3.17. Discussion

Based on findings found on site, the status of GMP application run by the UMKM Az-Zahrah that was assessed based on Permenperin RI No.75 / M-Ind / Per / 7/2010 [4] and KBPOM regulation no. HK 03.1.23.04.12.22007 Year 2012 is at D level with IV rating (less good). It is because there are some deviations that occur at the processing site. These deviations consist of two critical deviations, one serious deviation and one major deviation.

Minor irregularities are deviations in which if they are not corrected or disregarded continuously, they will potentially affect the quality of food. Major irregularities are irregularities in which if they are not corrected, they will potentially affect food security, and serious and critical irregularities are irregularities in which if they are not corrected, they will affect food security [5]

This study has shown that the implementation of GMP in processing shredded fish is very important in order to produce good quality of shredded fish products, guaranteed safety and fulfilled consumer expectations. Thus, in the future, the stages of the corrective actions of existing deviations are the most important action in the processing activity [1,6,7].

The results of this study provide some managerial implications, that is improvements toward critical deviations [8]. In this regard, prohibition all kind of pets such as dogs, cats, chickens, sheep, and others to enter production room because it can contaminate the product. In order to keep storage room from insect pests, the room must be regularly cleaned and the food must be placed in the container that does not have direct contact with floor, wall or ceiling of the room.

Pest control is the important thing that cannot be disregarded because pests such as birds carry biological contaminants that can reduce the quality and food security [9]. Based on research on the implementation of Good Manufacturing Practices by Ristyandani & Darimiyya (2012), the number of pest/animal intruders in the production area should be of concern, because the animal faces or diseases that they usually have, may transmit to humans, then it can be harmful to the quality of the final product. In addition, according to [9], dust and soil is a source of microbial transmission and its spores. A room without adequate sanitation is a good growth medium for many types of pathogenic bacteria, which cause various diseases..

Additionally, the attachment of health labels such as health and nutritional claims is also important. Based on the Regulation of the Head of the POM Number HK.03.1.23.11.11.09909 Year 2011, the claim is any form of description stating, suggesting or indirectly stating the specific quality of processed food such as nutrient content, nature, production, processing or other quality factors. Claims on processed foods include nutritional claims and health claims. The improvement implication of serious deviation according to BPOM,[8] is related to the requirement of production employees. They should wear work clothes, gloves, masks, and work shoes. Employees should also wash their hands with hand soap after work and in particular after going to the toilet. Employee habits such as eating and drinking at work, smoking, spitting, sneezing in front of the food and using jewellery must be prohibited since these habits may contaminate the processed food products. According to Pupitas and Monika (2016), employees should wear standard clothing for a food industry, namely head, mouth and nose, and gloves covers [10].

While the improvement implication of major deviations according to BPOM [11] is the existence of the bathroom that is not directly related to the treatment room, enough ventilation, easy to clean and enough washing water.

4. Conclusion

The status of GMP application run by UMKM Az-Zahrah to produce shredded fish is at D level (less good) with rating IV. The UMKM Az-Zahrah needs to implement CPPB well and correctly in order to produce better products. It is important for the UMKM Az-Zahrah to take corrective action to reduce the existing deviations to improve its GMP application status.

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