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ANALYSIS OF THE APPLICATION OF GOOD PROCESSED FOOD PRODUCTION IN THE MAKING OF TUNA FISH ICE CREAM NUGGETS IN MAMAZY MITOHA YOGURT AND FROZEN FOOD

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ABSTRAK

Quality and safe fishery products can be produced by implementing a quality assurance and fishery product safety system. According to PERMEN-KP / 51/2018 that the requirements for the quality assurance and safety system of fishery products have basic requirements, namely the application of good fish handling and / or processing methods and standard operating procedures for sanitation (SSOP). Therefore, a good way of producing processed food (CPPOB) is one of the important components in producing processed food, especially in processed fisheries. This study aims to analyze the extent to which the effectiveness of the implementation of Good Processed Food Production Methods (CPPOB) and the process flow in making tuna ice cream nuggets in producing good quality food and safe for consumption. This research was conducted from August - September 2019. This study aimed to evaluate the application of CPPOB (Good Processed Food Production Methods) in Mamazy Mitoha Yogurt and Frozen Food UKM based on KEPMEN-KP / 52A / 2013. The research method used is the study of literature, by directly going to the field and following the flow of the process, looking at the state of SMEs to obtain data. The data analysis

method used is a comparative descriptive analysis method. The results showed that the CPPOB in Mamazy Mitoha Yogurt SMEs and the Frozen Food identified, CPPOB in UKM contained several components that did not meet the standards of Good Processed Food Production Methods so that there was a need for improvement.

Keywords: cppob, safety, quality, nuggets, tuna

PENDAHULUAN

The high quality and safe fishery products can be produced by implementing a quality assurance and fishery product safety system. According to Rahayu and Adhi (2016), the process of the fishery product must meet some requirements such as good processing product, quality assurance system, safety fishery product. This is based on KEPMEN-KP/52A/2013 stating that food product like fishery products which are sold in market must meet some requirements so that they are safe to be consumed by people. The quality assurance is an important factor to keep the high quality product so that the management of quality assurance is highly needed for all the processing products. The high quality assurance is very important since it is as an added value for the products.

According to Permen-kp/51/2018, the requirements for good quality and safety assurance of fishery products are the implementation of handling and/ or good fishery processing and procedure of sanitaion standard operation (ssop). Based on this Permen-kp the good food processing products or good manufacturing practices (gmp)is one of the requirements to keep the high quality and safe products. GMP is the detailed technical procedure which is implemented to make sure that the process is as the requred rules.GMP and CPPOB consists of requirements for the products, location, building and facilities, product tools and workers (Dewanti dan Hariyadi 2013. The applicattion of CPPOB is also important for UKM so that it can produce good quality and competitive products. Hubies and Najib (2014) said that the applicattion of GMP and food quality

standards can improve the sustainabelity and marketing of the UKM food products.

Small and Medium enterprises (UKM) is as an independent productive Business done by individual or by Business agency which is not a branch owned by directly or indirectly Small or big company and has yearly income as stated by rules (UU RI/20/2008). According to Pinandoyo and Masnar (2019) UKM still has problems. The biggest problems are lacks of human resource, insufficient facilities, hygiene, safety, sanitation so that it cannot meet the requirements for high quality food standards. It also applies to UKM which produces fishery products.

Fishery products are vulnerable food products. Since It can be damaged by microorganism and enzym, they need to be processed very well to keep their high quality. Fish products can decrease in their quality since the Fish contain high protein which has high amino accid used for microorganism metabolism and ammonium products (Liu and friends 2010). That is why the processing and preserving are highly needed.(Afrianto and Liviawaty 1989). One of its products is nugget. Nugget is a processed products of Frozen meat through milling process mixed with binder, then shaped and breaded (Melisa 2011). Nugget comes in many shaped and one of them is like ice cream. The shape is like kaki naga(the leg of the dragon). The ingredients are fish and one of them is tuna fish.

Tuna fish has high protein and low fat (Korompot 2018). Buckle and friends (1987) stated that protein in fish is influenced by water and fat. There is inverse relationship between protein and water content on the part that can be eaten. The more protein, the less water will be. Based on research, the content of protein in the meat of the fresh fish is 23.2 % (Wahyuni 2011), Wellyana and friends (2013) got 20.64%, Nurilmala and friends (2006) got 26.02% in tunabone. While there is low fat (<5%) (Wahyuni 2011), Wellyana and friends (2013) got 1.6% for fat content, and Nurilmala

and friends (2006) got 8.01% in tunabone.

UKM Mamazy Mitoha Yogurt and Frozen Food is the small and medium enterprise which made nugget shaped like tuna fish ice cream.The applicattion of CPPOB is one of the basic requirements for getting HACCP in order to produce good and safe quality food to be consumed.The analysis of CPPOB applicattion in UKM Mamazy Mitoha Yogurt and Frozen Food is aimed to fulfil the requirement to get the Business permit. This research is important to find out how effective the applicattion of CPPOB is and to know the process of making tuna fish ice cream nuggets to become high quality food products which are safe to be consumed.

Research Method

The Method used in this research is literature study method. It means that the data collecting technique is done by studying books, literature, noted, and various reports related to the problems which are going to be solved.(Nazir 1988). Research is conducted by observing directly the process of making tuna fish ice cream nuggets and the situation of the enterprise and then the data is gathered. The data is collected by observing CPPOB on the spot based on the questionaire and then they are analyzed referring to KEPMEN-KP/52A/2013 about the requirements for quality assurance and fishery product security on the product process, processing and distibution. Chemical and microbiology test data are derived from UKM which has been tested in PT. Saraswanti Indo Genetech Bogor laboratory, then they are analyzed referring to National Standard of Indonesia (SNI) about fish in 2013.

Results and Discussion

Tuna Fish Ice Cream Nugget Production Process Flowchart

The raw material comes from the Ciroyom or Caringin parent market in Bandung. Transporting fish from the market using a plastic bag coated with a colored plastic bag with the process of transporting a motorcycle without using ice for 30 minutes. After the transportation process, the fish are then immediately washed by workers using clean running water. ln this UKM, the water is from the PDAM. According to SNI (2013) nugget washing must use water flowing and done quickly, carefully and sanitarily in cold temperature condition (0 ° C - 5 ° C).

The fish that have been washed by the employee then enters the grinding process using a meat grinder. According to SNI nugget (2013), fish meat grinding is pulverized using a meat grinder and is done quickly, carefully, and sanitary while maintaining cold temperatures (0 ° C - 5 ° C). The milling process carried out in the UKM is still not good because the employees do not use masks and gloves, the meat grinder used is cleaned poorly and there are a few rusty parts. Furthermore, the process of mixing ingredients, mixing additives and fish used for the manufacture of nuggets was weighed according to dosage. According to SNI nuggets (2013) the process of mixing the ingredients ie meat mixture is put into the mixing tool, added with salt and mixed to get a sticky dough (sticky). The evenly mixed nugget dough is formed following the shape of the ice cream stick used. The nuggets that have been formed are then fried in a lot of cooking oil until the nuggets are submerged. Nugget is put after hot oil around 170-200 ° C, the flame used is medium heat. Frying is done half-cooked about 3 minutes until the color is slightly brown. This process is known as the Maillard reaction. Maillard reactions in food can function to produce food sensory properties such as flavor and aroma. In some food products can have undesired effects, such as reducing levels of protein solubility (Prangdimurti et al 2007).

Mature nuggets are removed using a sieve and transferred in a place that has been given tissue for draining. Cooking oil used by workers during frying is used repeatedly and is not counted by workers. Aminah's research results (2009) show that cooking oil used for frying repeatedly will affect the color and aroma of the oil and affect the taste, aroma and color. The drained nuggets are then packaged. The packaging of the nugget is in accordance with the size of the scales to be marketed, in this process previously weighed as much as 250 grams and then put in PE plastic packaging that has been labeled. Furthermore, the packaging is in a sealer using a sealer machine. After packaging the nugget is stored in a frezzer at -18^{o}C, this is to maintain product quality.

Application of Good Processed Food Production Methods in Making Tuna Ice Cream Nuggets

1. Production Location

The location of the production of tuna ice cream nuggets was carried out at Mamazy Mitoha Yogurt and Frozen Food Jalan Cikadut Raya No.33, Bandung, West Java. Site selection

must look at factors - factors that can support the production process but according to ability. Factors are like the location of sources of raw materials, markets, availability of labor, availability of electricity, water availability, transportation facilities, housing facilities, health and security services, local government regulations, land and building costs, drainage, road width, possible expansion , community attitudes (Herjanto 2007).

2. Building

The production building is on the second floor of the building, where on the first floor is a place for selling products. The production building consists of two floors with an area of 140 m2. The spatial layout of the UKM building has a separate reception and production room. The reception room itself is adjacent to the production room which is equipped with separate screens and doorways.

Conditions in SMEs	**KEPMEN-KP/52A/2013**
1 Production room floor, reception, hand washing facilities: white ceramic (bright colored), not cracked, smooth surface and waterproof and easy to clean. The slope between the processing site and the washing place is less so that there is a pool of water. 2. Toilet floor: there are cracks, conditions are not clean and not maintained because it is rarely cleaned The floor used must have sufficient slope construction, waterproof, easy to clean and sanitize and be designed in such a way as to facilitate water disposal.	The floor used must have sufficient slope construction, waterproof, easy to clean and sanitize and be designed in such a way as to facilitate water disposal.
The walls used in UKM are combined with ceramics that are green, not cracked and waterproof.	The walls must be flat, easy to clean, strong and impermeable
The angle between	Ceiling or roof

the wall and the ceiling is still in the shape of a right elbow that is not curved so that there are gaps that can cause accumulation of dirt if not properly cleaned and made of fibersemen.	connection is easy to clean.
The window in the production room is not available, the room only has air ventilation, the amount of ventilation is not suitable for air circulation because it is in the form of a ventilation block combined with a glass block.	Enough ventilation and air circulation to avoid condensation.
The door of UKM is made of sturdy, waterproof material, easy to clean but there is still a gap in the carrying part of the door. There are two doors in the production room and open to the outside. There is plastic for the bulkhead.	The door is made of strong material and is easy to clean.
The lighting in the production room still has lights that are not insulated or covered. The number of lights for lighting is enough.	Enough lighting, both lamps and natural light

3. Sanitation Facilities

According to PERMEN-PER / 75/2010 water supply facilities (well water and PAM) should be equipped with water reservoirs. Water used in the processing process at UKM uses PDAM water. The SMEs do not have water reservoirs or reservoirs.

According to PERMEN-PER / 75/2010 waste must be immediately disposed of in a special place to prevent it from becoming a gathering place for rodents, insects or other animals so as not to contaminate processed food or water sources.

Garbage disposal in UKM near the sink which facilitates the disposal process is also located outside the production room with a closed condition. The drain in the production room is in accordance with the cover to prevent contamination. Drains that go out through the walls of the processing room must be equipped with protective equipment, for example iron bars that can be removed so as to facilitate cleaning and prevent the entry of rats and other animals into the processing room (Winarno and Surono 2004).

According to PERMEN-PER / 75/2010 cleaning facilities should be equipped with clean water sources and if possible equipped with hot and cold water supply. Facilities for cleaning in UKM have been separated from employees' washing facilities, but they are not equipped with hot water supply. According to KEPMEN-KP / 52A / 2013, the toilet is not directly related to the process room. There are two bathrooms or toilets in UKM outside the production room. one toilet.

According to Kusmiyati et al (2013) facilities needed for adequate hand washing are hand washing basins equipped with closed drains, hot water taps, soap and paper / tissue towels or drying machines. The hand washing facility in UKM is located near the employee's locker room before entering the production room and near the toilet, and the washing facilities are in accordance with the standards..

4. Employees

There are 10 employees in UKM, where there are 2 people who make nugget production. During the process no one was sick, using jewelry, smoking, and fully clothed at work. This is in accordance with applicable regulations.

5. Pest Control Processing Room

According to PERMEN-PER / 75/2010 a pest control program is carried out to reduce the possibility of pest attacks through a good sanitation program, supervision of materials that enter the factory. Mouse glue, usually found around the sink as a washing place, is used in the pest control in the processing room. Magic chalk or special lime is used to control ants and other insects.

6. Equipment and Supplies

According to KEPMEN-KP / 52A / 2013 the equipment and equipment used directly related to the processed fish must be designed and made of rust resistant material, non-toxic, does not absorb water, is easy to clean and does not cause contamination of fishery products. The equipment used in SMEs is in good condition, but some equipment is a little rusty. Rusty equipment such as meat grinder and sink. The rusty equipment is due to the lack of attention to cleanliness, therefore there must be more supervision from SMEs.

7. Ingredients

According to PERMEN-PER / 75/2010 the materials referred to in this guideline are raw materials, supplementary materials, auxiliary materials including water and food additives (BTP). The ingredients used in the process of making nuggets are fish, flour, bread flour, and seasonings. The material used is placed in a storage room. The main ingredients such as fish meat are in the frezzer while for ingredients such as flour placed in a place placed on the table. It is intended that the quality of the material is maintained.

Chemical and Microbiological Test Results of Tuna Ice Cream Nugget

The following is a table of microbiological and chemical test parameters

No	Microbological and Chemical Test Parameters	Standard Limits	Test results	Unit
1	ALT	Maks 5 x 10^4	<10	colony/g
2	*Escherichia coli*	<3	<3	MPN/g
3	*Salmonella sp.*	Negatif	Negatif	-
4	Water content	Maks 60.0	41.84	%
5	Protein levels	Min 5.0	7.22	%
6	Fat level	Maks 15.0	7.36	%
7	Ash Levels	Maks 2.5	2.76	%

Based on the above chemical test results it can be seen in the ash content test exceeds the standard but not too far away. Whereas the results of other tests did not exceed the standard of fish nuggets. Therefore, the results of tuna ice cream nuggets in UKM Mamazy Mitoha Yogurt and Frozen Food are according to existing standards. Ash

content slightly exceeds the standard because it is influenced by the type of fish, according to Arias et al (2004) explains that the ash content in fish depends also on the type of fish meat. White meat has lower ash content than red meat because red meat contains a lot of minerals carried by myoglobin and stored in red meat. The content of tuna ash content in the fresh meat is 1.3% (Wahyuni, 2011).

Ash content can indicate the total minerals contained in these foods. Ash content is also used to evaluate the nutritional value of a food. Most of the food ingredients contain organic matter and water while the rest are mineral elements, namely ash content. Ash content contained in the nugget is still within reasonable limits so it does not greatly affect the nugget. As for the results of microbiological tests with ALT, Escherichia coli, and Salmonella sp. Indicates parameters in accordance with the standards of fish nuggets. It can be concluded that tuna ice cream nugget produced by Mamazy Mitoha Yogurt and Frozen Food is in accordance with the standard.

Minor, Major, Serious, Critical Deviations

Major and minor deviations are not found in SMEs based on the BPOM IRT checklist form (2012). Serious irregularities in Mamazy Mitoha Yogurt and Frozen Food based on checklist are found at the point of dirty / untreated toilet / toilet facilities and open to the production room. Toilet facilities at UKM are dirty because they are rarely cleaned. There are cracks on the floor and the walls are dirty. Toilets in UKM are located outside the production room, so they are not directly related to the production room.

According to KEPMEN-KP / 52A 2013 directly related to the production space. Critical deviations that occur in SMEs based on the checklist form are found in the tools used by rusting and at the point where animals enter the production area. Rusty tools are found in meat grinders and sinks used for washing materials and production equipment. Animals that enter the production area for example cats, this is because the door is sometimes not closed so that the animal easily enters.

IRTP Level of	Frequency Internal Audit	Total Deviations			
		Minor	Major	Seriously	Critical
IV	everyday	NA	NA	1	2

Judging from the table above, the results obtained at the UKM or UPI are included in level IV, which must be checked every day. This is seen based on the number of major, minor, serious, and critical. This fish processing unit has implemented a good quality management system on its processing with a marked ISO 9001: 2008 certification.

Conclusions and recommendations

Conclusion

Application of Good Processed Food Production Methods (CPPOB) in the processing of tuna yogurt ice cream nuggets and frozen food some components are in accordance with KEPMEN-KP / 52A / 2013 and SNI nugget in 2013, it is seen based on the assessment of irregularities found in the UKM through checklist form and product evaluation based on SNI to fish nuggets seen from chemical and microbiological assessments.

Suggestion

Employees at these SMEs should be given further supplies to increase their knowledge and abilities regarding CPPOB. It aims to improve the quality of the products produced.

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