

Fulfillment of Distribution Permit Requirements for Yoghurt MSMEs

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ABSTRACT

Micro, small and medium enterprises (MSMEs) face challenges in obtaining distribution permits from the Indonesian Food and Drug Authority (BPOM) for food produced domestically, due to their limited knowledge and competence in implementing good manufacturing practices (GMP) and preparing the registration requirements. This study aimed to: (1) improve the achievement of GMP implementation in yoghurt MSMEs in preparation to get distribution permits; and (2) verify the fostering results of yoghurt MSMEs through microbiological testing. Field observations and interviews were conducted over the owner or manager of seven yoghurt MSMEs using assessment form, and mentoring program was developed to help the MSMEs fulfill permit requirements. Verification was done through microbiological testing. Results of the study showed that yogurt enterprises with ratings A, B, and C were found to have one MSME each (14.3%), while four MSMEs (57.1%) were at D ratings. The mentoring program for two MSMEs (A and B ratings) showed the decrease of unconformities and increase of MSME rating from B to A. The mentoring program has been successful in bringing the two MSMEs to fulfill all registration requirements for processed food distribution permit. The result of the Salmonella test on yoghurt samples was negative, and the presence of Enterobacteriaceae was within the permissible limits (<10 colonies/g).

1. INTRODUCTION

Yogurt is a product formulated using *Streptococcus thermophilus* and *Lactobacillus delbrueckii* subsp. *bulgaricus* bacteria, which produce lactic acid which lowers pH and coagulates milk protein (Nagaoka, 2019). Yogurt is a source of protein for human consumption, but on the other hand it can be a source of foodborne pathogens, which generally come from unpasteurized fresh milk (Zastempowska *et al.*, 2016).

Commercial yogurt has been developed over the past 100 years, creating a broad market segment that offers various innovations such as yogurt with sweeteners, flavors, low fat, ready to drink, and probiotics so that they have health benefits (Fernandez *et al.*, 2017). Yogurt consumption continues to increase worldwide (Yang & Yoon, 2022). The development of yogurt in Indonesia tends to increase, marked by the many types and brands of yogurt products on the market and the increasing level of yogurt consumption. According to BPOM (2018), regarding Food Consumption Figures, the consumption of fermented milk including yogurt by the Indonesian people per day is 155 g/person.

As a food product, yogurt must be safe and of high quality. This is a basic requirement that must be met by business actors. In order to ensure the quality and safety of their products, business actors must implement good processed food production practices (CPPOB : Cara Produksi Pangan Olahan yang Baik). CPPOB is a guideline that explains the

procedures for the industry to produce processed food so that it is of good quality, suitable for consumption and safe. This guideline was issued by the Minister of Industry Number 75/M-IND/PER/7/2010 concerning Guidelines for Good Manufacturing Practices for Processed Food (Kemenperin, 2010).

CPPOB is a requirement that must be met by MSME actors to obtain a distribution permit from the Indonesian Food and Drug Authority (BPOM) for processed food produced domestically. BPOM has developed a risk-based e-registration application (risk-based approach e-registration or ereg RBA) which is integrated with online single submission (OSS). In the RBA ereg application, each type of food will be included in one of the risk levels, namely medium low risk, medium high risk, or high risk, and will obtain a business license to support business activities (PBUMKU : Perizinan Berusaha Untuk Menunjang Kegiatan Usaha) which is different for each risk level. Based on the risk level, yogurt is included in the high-risk food category (BPOM, 2022b).

Data from the Bogor POM Center's supervision of drug and food production facilities during 2023 showed that facilities that met the requirements (MK) were 66.2% and did not meet the requirements (TMK) were 33.8% (Balai POM Bogor, 2023). Based on these data, there are still many food MSMEs, including those producing yogurt in Bogor Regency, that have not implemented CPPOB. The dominant findings from the supervision data are documentation and recording, food safety practices, and compliance with labeling requirements. The lack of implementation of CPPOB has resulted in less guaranteed food quality and safety, so that the products produced are prone to microbial contamination, and do not meet the requirements to obtain a distribution permit.

Therefore, it is necessary to provide guidance on the implementation of CPPOB in yogurt MSME production facilities, so that their rating can be improved. MSMEs that have received an A–B rating in the assessment of the implementation of CPPOB still require further assistance in order to be able to meet the requirements for registration of processed food distribution permits from BPOM. The results of the assistance need to be verified through microbiological tests. The objectives of this study are: (1) to improve the achievement of CPPOB for yogurt MSMEs in Bogor Regency in preparation for registration of processed food distribution permits; and (2) to verify the implementation of CPPOB for yogurt MSMEs through microbiological tests.

The benefits of this study are to improve the knowledge and skills of MSMEs in implementing CPPOB and understanding the requirements for registration of processed food distribution permits, as well as providing data on the implementation of CPPOB for yogurt MSMEs. For the Directorate General of Animal Husbandry and Animal Health, the Bogor Regency Fisheries and Animal Husbandry Service and the Bogor POM Center, this study is expected to be useful in increasing the focus of coaching for improving the quality and safety of yogurt products, as well as facilitating facilities and infrastructure in supporting the fulfillment of hygiene and sanitation in the context of registration of processed food distribution permits.

2. RESEARCH MATERIALS AND METHODS

The research was conducted from March to June 2024. CPPOB observation activities on yogurt MSMEs were carried out in Bogor Regency, while microbial contamination testing was carried out at the SIG Laboratory (Saraswanti Indo Genetech) Bogor.

The sample material in this study was yogurt produced by small and medium enterprises (SMEs) in Bogor Regency. Materials used for *Salmonella* sp. testing included Buffered Peptone Water (BPW) (Oxoid® CM0509B), Rappaport-Vassiliadis (RV) medium (Oxoid® CM0866), Xylose Lysine Deoxycholate (XLD) agar (Oxoid® CM0469), and L-lysine decarboxylation (LDB) medium (Merck®). Materials used for *Enterobacteriaceae* testing included Violet Red Bile Glucose (VRBG) agar (Oxoid® CM0485), Oxidase Test Strips (OTS) (Merck®), Glucose OF Medium (GOF) (Himedia®), and mineral oil (Merck®).

The equipment used for sample collection and testing included a cool box, oven, autoclave, incubator, water bath, homogenizer, refrigerator, freezer, inoculating loop, pipettes, and various glassware. Data collection for the observation of CPPOB implementation was conducted using an assessment form based on the Decree of the Head of the Indonesian Food and Drug Authority No. HK 02.02.1.2.01.22.63 of 2022.

2.1. Research Procedure

The research was conducted through three stages, namely: (1) determining the rating of MSMEs; (2) coaching for MSMEs with ratings A and B in preparation for registration of processed food distribution permits; and (3) verification of coaching results through microbiological testing of yogurt products.

2.1.1. Determination of MSME Rating

The study began with the collection of secondary data on the number and location of MSMEs producing yogurt in Bogor Regency, which was obtained from the Bogor Regency Animal Husbandry and Fisheries Service. Based on this data, the object of observation was determined using the purposive sampling method, namely a sampling determination technique with certain considerations/criteria (Asari *et al.*, 2023). The MSME criteria in this study are: (1) MSMEs producing yogurt and located in Bogor Regency; (2) the classification of MSMEs is micro and small businesses in accordance with PP No. 7 of 2021 concerning the Facilitation, Protection and Empowerment of Cooperatives and MSMEs; and (3) do not yet have a processed food distribution permit (Pemerintah Republik Indonesia, 2021).

Primary data was obtained through observation of the implementation of CPPOB in MSMEs. Observations are carried out through interviews with business managers, and observations/inspections and assessments of production facilities using questionnaires/forms based on the Decree of the Head of BPOM Number HK.02.02.1.2.01.22.63 of 2022. The form includes 25 assessment aspects including: (1) commitment of the person in charge of production facilities; (2) production facility environment; (3) building construction and layout; (4) processing area; (5) water, ice, gas and energy; (6) ventilation and air quality; (7) lighting; (8) waste management and drainage; (9) equipment; (10) sanitation program; (11) management of goods and services; (12) raw materials, food additives, auxiliary materials, packaging and final products; (13) process control and prevention of cross-contamination; (14) handling of inappropriate products; (15) internal testing laboratories; (16) pest control; (17) employee facilities and personnel hygiene; (18) personnel training; (19) packaging; (20) control of non-food chemicals; (21) traceability and recall system; (22) storage; (23) loading products into vehicles; (24) product information; and (25) emergency food safety response. In the mentioned 25 aspects, there are 68 clauses that will be the basis for assessing the implementation of CPPOB for MSME production facilities.

Non-conformities found in each clause are classified into minor non-conformities, major non-conformities, and critical non-conformities. If the clause being assessed contains minor non-conformities, it is given a weight of 1, if a major non-conformity is found, it is given a weight of 2, while critical non-conformities automatically cause the production facility to receive a rating of D (very Poor). This is because critical findings are the highest non-conformities that directly affect food safety, so they become a mandatory requirement (Fithriyani *et al.*, 2022). When the clause being assessed does not apply to MSME production facilities, the clause is given a statement that it does not apply (TB) (BPOM, 2022a). The CPPOB implementation rating is determined based on the sum of the weights of the 68 assessed clauses. The CPPOB implementation rating assessment guide can be seen in Table 1. MSMEs with A–B ratings were then given coaching and mentoring.

Table 1. Rating guidelines for CPPOB implementation assessment (BPOM, 2022a)

Rating	Score Range
A (Very Good)	0–12
B (Good)	13–22
C (Poor)	23–56
D (Very Poor)	>56 or if any critical findings present

2.1.2. MSME Guidance

Guidance was carried out on MSMEs rated A–B, because rating B is the minimum requirement to obtain a processed food distribution permit (BPOM, 2022a). Guidance aims to improve the achievement of CPPOB for yogurt MSMEs in preparation for registration of processed food distribution permits. Guidance was carried out by visiting MSMEs 2–4 times to correct findings of non-conformities based on the results of observations of the implementation of CPPOB. Corrective actions include improving facilities and infrastructure, preparing quality guidelines, and improving label

design. Evaluation of the results of the guidance was observed from the decrease in the number of non-conformities in the implementation of CPPOB, and the fulfillment of the requirements for processed food distribution permits.

2.1.3. Verification through Microbiological Testing

Verification through microbial testing was carried out after guidance on the implementation of CPPOB. Verification of microbial testing uses parameters according to BPOM Regulation No. 13 of 2019 concerning the Maximum Limit of Microbial Contamination in Processed Foods including *Salmonella* and *Enterobacteriaceae*. The number of samples analyzed from one lot/batch of processed food was five samples (BPOM, 2019). The samples were put into sterile containers and taken to the laboratory using a cool box containing ice gel.

Salmonella sp. was detected according test of ISO 6579-1: 2017. This method consists of four stages, namely pre-enrichment sample preparation, enrichment, inoculation on selective media, and confirmation with biochemical tests (ISO, 2017). A total of 25 g of yogurt samples were weighed aseptically and put into 225 mL of Buffered Peptone Water (BPW) and homogenized. The solution was incubated at 34–37°C for 24 h. The incubated sample of 0.1 mL was put into 10 mL of Rappaport-Visiliadis medium then streaked on an ose rod on Xylose Lysine Deoxycholate Agar (XLDA) and incubated at 37°C for 24 h. A positive *Salmonella* sp. sample will be bright red and black in the middle. The sample is subjected to a biochemical confirmation test with L-lysine decarboxylation (LDB) by scratching the agar surface in the middle and incubating at 37°C for 24 h. Positive *Salmonella* will be purple and turbid.

Enterobacteriaceae testing was based on ISO 21528-2:2017. A 25 g yogurt sample was weighed aseptically and put into 225 mL Buffered Peptone Water (BPW) and homogenized. A sample of 1 mL (10–1) was taken and inoculated into a sterile petri dish (done in duplicate). A 15 mL violet red bile glucose (VRBG) agar was poured into the petri dish and stirred, then left to stand until the VRBG agar solidified. Then 5–10 mL VRBG agar was poured again, then allowed to solidify again. The steps above were carried out on the other dilutions. All petri dishes were incubated in an incubator at 37°C for 24 hours. Colonies from VRBG agar were taken with an ose and swabbed onto the Oxidase Test Strip (OTS). Samples that were positive for *Enterobacteriaceae* were seen to have a blackish purple color on the OTS.

The confirmation procedure was carried out using Glucose OF Medium (GOF) on blackish purple colonies suspected of containing *Enterobacteriaceae*. Colonies from VRBG agar were taken with an ose and placed in a tube containing 5 mL of GOF, then 1 mL of sterile mineral oil was added. The tube was incubated at 37°C for 24±2 hours. After 24 hours, if a yellow color appears in the tube, it indicates a positive fermentation test. The number of *Enterobacteriaceae* in the sample was calculated from the number of colonies that produced a negative oxidase reaction and a positive glucose fermentation test. *Enterobacteriaceae* colonies can be calculated as the following:

$$N = \frac{\sum c}{V \times 2.2 \times d} \quad (1)$$

where N is number of colonies per gram of sample, $\sum c$ is total number of colonies obtained from all dilutions or from two dilutions containing 10–300 colonies, V is volume of inoculum plated into the petri dish, and d is highest dilution factor of the petri dish included in the colony count (e.g., 100, 10^{-1} , 10^{-2} , and so on)

3. RESULTS AND DISCUSSION

3.1. Rating of CPPOB Implementation before Coaching

Secondary data from the Fisheries and Animal Husbandry Service, Bogor Regency, shows that there are nine yogurt MSMEs located in Bogor Regency with the criteria of micro and small businesses. Of the nine MSMEs, two MSMEs (22.2%) have processed food distribution permits, while seven MSMEs (77.8%) do not have processed food distribution permits. Based on these criteria, the number of respondents observed was seven MSMEs.

The results of observations on the implementation of CPPOB show that of the seven yogurt MSMEs in Bogor Regency whose products do not yet have a processed food distribution permit, one MSME (14.3%), namely MSME 1, obtained an A rating, one MSME (14.3%), namely MSME 2, obtained a B rating, one MSME (14.3%), namely MSME 3, obtained a C rating and four other yogurt MSMEs (57.1%), namely MSME 4, 5, 6 and 7, obtained a D rating. The C–

D rating indicates that there are still many minor, major and critical non-conformities found in MSMEs in fulfilling CPPOB. The results of CPPOB observations on yogurt MSMEs can be seen in more detail in Table 2. Distribution permits can only be granted to MSMEs with ratings A and B, so priority assistance is given to MSMEs 1 and 2.

Table 2. Results of CPPOB implementation by yogurt MSMEs in Bogor Regency before coaching

MSMEs Name	Non-Conformities			Total Score	MSMEs Rating
	Minor	Major	Critical		
MSME 1	4	3	0	10	A
MSME 2	7	4	0	15	B
MSME 3	13	11	0	35	C
MSME 4	15	16	2	47	D
MSME 5	11	18	3	47	D
MSME 6	11	17	3	45	D
MSME 7	9	16	2	41	D

3.1.1. Major Non-Conformity Findings

Major non-conformities are deviations from the requirements that should be, which have the potential to affect the efficiency of food product safety control (Fithriyani *et al.*, 2022). Major non-conformity findings in MSMEs 1 and 2, namely no water laboratory tests. MSME actors use bottled drinking water (AMDK) for raw materials while groundwater is used for sanitation and washing equipment. MSME actors are not yet aware that water can carry pathogenic microbes that are harmful to human health (water borne disease) (Riyanti *et al.*, 2021). Water for hygiene and sanitation purposes must meet environmental health quality standards (SBMKL) with parameters for *E. coli* content and total Coliform of 0 CFU/100 mL (Kemenkes, 2023). Water quality checks must be carried out routinely at least once a year.

The next major non-conformity finding in MSMEs 1 and 2, namely the unavailability of procedures and calibration programs for thermoindicators/thermometers to measure temperatures in the pasteurization and yogurt storage process. This is due to the lack of knowledge of MSME actors about the critical point of heating temperature which has an impact on product safety, so it must be measured validly. Storage temperature can also affect the shelf life of yogurt. Irawan (2019) stated that calibration is carried out to determine the difference in the reading value of the tool by comparing the standard value, so that it can guarantee valid data. Calibration should be carried out routinely at least once a year.

Major non-conformities were also found in MSMEs 1 due to the absence of a production code on the yogurt product label. The lack of knowledge of MSME actors that a production code is needed to facilitate product traceability is the cause of this finding. Ernawanti *et al.* (2018), stated that a production code is a code that provides an explanation of the history of a product that is processed under the same conditions and time. A production code is also needed to facilitate tracing in the event of an extraordinary event.

Another major non-conformity finding in MSMEs 2 was due to the absence of a fresh milk safety and quality monitoring program. Physical, chemical, and microbiological contamination in the fresh milk handling process can occur, which can reduce its quality. Quality control when receiving fresh milk must be carried out such as organoleptic tests, alcohol tests, and specific gravity.

Major nonconformities were also found in MSMEs 2 related to handwashing facilities and equipment. This is due to the lack of awareness among MSME actors that personnel hygiene and sanitation greatly affect the quality and safety of the products produced. Research by Negassa *et al.* (2022) shows that personnel who do not have access to handwashing facilities are 4.84 times more likely to produce unhygienic food than those who do. Handwashing facilities must be provided with clean running water and equipment in the form of soap, hand dryers, and instructions on how to wash hands. The findings of major nonconformities in MSMEs 1 and 2 can be seen in Table 3.

Table 3. Results of major non-conformities and corrective actions in MSME 1 and 2

CPPOB Aspect	MSME	Non-Conformity	Findings	Corrective Actions
Water Supply	MSME 1 and 2	Major	No laboratory testing of clean water	Routine clean water testing
Equipment	MSME 1 and 2	Major	No procedures and calibration programs for thermo-indicators/thermometers	Development of calibration procedures and programs
Traceability System	MSME 1	Major	No production code on product labels	Implementation of production code and corresponding explanations
Raw Materials	MSME 2	Major	No program for the safety and quality control of fresh milk	Organoleptic testing, alcohol test, and specific gravity test upon receiving milk
Facilities and Personnel Hygiene	MSME 2	Major	Washbasin not equipped with soap, hand dryer, or handwashing instructions	Provision of soap, tissue, and handwashing instructions

3.1.2. Minor Non-Conformity Findings

Minor non-conformities are deviations from requirements that have the potential to affect the quality of food products (Fithriyani *et al.*, 2022). Minor non-conformity findings in MSMEs 1 and 2, namely inconsistencies in the implementation of programs and records of routine personnel health checks. MSME actors do not yet understand that foodborne diseases can be transmitted by sick employees who handle food. Based on research by Negassa *et al.* (2022), food handlers who do not carry out routine health checks are 5.37 times more likely to produce unhygienic products than those who do.

The next minor non-conformity is due to inconsistencies in the implementation of programs and records of food safety training for all employees in MSMEs 1 and 2. Rebouças *et al.* (2017) stated that employee training has been shown to increase awareness of hygiene and sanitation as well as good food safety practices, thereby improving food safety and quality. Intensive training must be provided to employees periodically (Sucipto *et al.*, 2020).

Inconsistency in monitoring the storage temperature of yogurt was also a finding of minor non-conformity in MSMEs 1 and 2 due to the lack of awareness of MSME actors that the quality and safety of yogurt are greatly influenced by its storage temperature. Yahya *et al.* (2016) stated that temperature monitoring is very important because an increase in product temperature can cause microbial growth, thereby reducing quality and increasing the risk of food poisoning.

Another minor non-conformity found in MSME 1 was due to the packaging label not including net content, production code, nutritional information (ING), as well as incomplete manufacturer's address and incomplete ingredient list. In MSME 2, the label did not include ING, the manufacturer's address was incomplete, the ingredient list was incomplete, and still included the old halal logo. This was due to the lack of awareness of MSME actors about the importance of including complete packaging labels.

The construction of the building in the form of a pasteurization room door that opens inward and is not equipped with a plastic curtain was a finding of minor non-conformity in MSME 2. Other findings of minor non-conformity in MSME 2 were inconsistency in implementing programs and product handling records that did not meet the criteria. This is caused by MSME actors who do not understand that if the product does not meet the criteria until it reaches consumers, it can cause losses such as foodborne diseases or complaints from consumers. Donauer *et al.* (2015) stated that products that do not meet the criteria can be detected by inspection before shipping.

The next finding of minor non-conformities in MSME 2 is the inconsistency in the implementation of pest control procedures and programs. Pests such as rodents and insects are carriers of biological contamination that can reduce the quality and safety of food. Amin *et al.* (2018) stated that pest control can be carried out with mouse traps, insect killers, and other pest controls without contaminating food. Ardhanawinata *et al.* (2023) stated that pest prevention is carried out by installing wire mesh on ventilation and installing plastic curtains to block dust, dirt, and insects. Maintaining cleanliness and closing drainage holes can prevent pests from entering the production room. Findings of minor non-conformities in MSMEs 1 and 2 can be seen in Table 4.

Table 4. Results of minor non-conformities and corrective actions in MSME 1 and 2

CPPOB Aspect	MSME	Non-Conformity	Findings	Corrective Actions
Facilities and Personnel Hygiene	MSME 1 and 2	Minor	Inconsistent implementation and documentation of employee health check programs	Development of employee health check program and documentation
Personnel Training	MSME 1 and 2	Minor	Inconsistency in employee training programs and records	Conduct internal CPPOB training for all employees and maintain training records
Final Product Storage	MSME 1 and 2	Minor	Inconsistent monitoring of final product storage temperature	Development of procedures and records for temperature monitoring
Product Information	MSME 1 and 2	Minor	Missing net weight, production code, ING, incomplete producer address, and incomplete ingredient list on MSME 1; MSME 2 had outdated halal logo and similar issues	Redesign of product labels in accordance with labeling regulations
Building Construction	MSME 2	Minor	Production room door opens inward and lacks plastic curtain	Installation of plastic curtain to prevent dust and insects from entering the production area
Handling of Non-Conforming Products	MSME 2	Minor	Inconsistency in handling and documenting non-conforming products	Development of program and procedures for handling non-conforming products
Pest Control	MSME 2	Minor	Inconsistency in pest control programs and procedures	Installation of insect killers and rat traps around production facility, along with procedures and records

Table 5. Evaluation of the implementation of CPPOB for yogurt MSMEs in Bogor Regency after coaching

MSMEs Name	Non-Conformity and MSME Rating					
	Before Coaching			After Coaching		
	Minor	Major	Rating	Minor	Major	Rating
MSME 1	4	3	A	0	0	A
MSME 2	7	4	B	0	0	A

3.2. Implementation of CPPOB by Yogurt MSMEs After Coaching in Bogor Regency

Corrective actions for major and minor non-conformities in MSMEs 1 and 2 can be seen in Table 3 and Table 4, and the decrease in the number of non-conformities and increase in MSME ratings after coaching can be seen in Table 5. The requirements for registering distribution permits by MSMEs 1 and 2 can be met after coaching. The initial stage for obtaining a processed food distribution permit certificate is the issuance of a CPPOB application permit for MSMEs 1 and 2, with the availability of required documents including: (1) a map of the location of production facilities; (2) a building plan; (3) a quality guide; (4) a description of processed food; and (5) a production process flow. The next stage for company and product registration, with requirements that have been met by MSME actors after coaching, in the form of: (1) an explanation of the production code; (2) an explanation of the expiration date; (3) material specifications; (4) label design; and (5) analysis results (BPOM, 2022b). Fulfillment of processed food distribution permit requirements can be seen in Table 6.

One of the requirements for registration of processed food distribution permits that must be met by MSME actors is the provision on packaging labels. Ernawanti *et al.* (2018) conducted an evaluation of the conformity of PIRT dry food product labels sold on Tokopedia based on BPOM regulations on labels, and the data showed that the conformity was still low. The highest conformity was met in the product name (41%), while the lowest conformity was in the inclusion of the name and address of the producer (8%). Improvements to the label design were carried out on MSMEs 1 and 2 in accordance with applicable regulations, not only to make the product appearance more attractive, but also so that the information on the label is complete. A description of the improvements to the packaging labels on MSMEs 1 and 2 can be seen in Table 7.

Table 6. Fulfillment of processed food distribution permit requirements by MSME 1 and 2 before and after coaching

Permit Requirement Aspect	MSME 1		MSME 2	
	Before Coaching	After Coaching	Before Coaching	After Coaching
Production facility location map	√	√	√	√
Building layout	√*	√	√*	√
Quality manual	√*	√	√*	√
Processed food description	-	√	-	√
Production process flow	√	√	√*	√
Explanation of production code	-	√	√*	√
Explanation of expiration date	√	√	√	√
Material specifications	-	√	-	√
Label design	√*	√	√*	√
Laboratory analysis results	-	√	-	√

Note: * = incomplete; - = not available

Table 7. Compliance with labeling regulations by MSME 1 and MSME 2 before and after coaching

Label Elements	MSME 1		MSME 2	
	Before Coaching	After Coaching	Before Coaching	After Coaching
A. Most visible and legible part of the label				
- Product name*	√	√	√	√
- Net weight or net content*	-	√	√	√
- Name and address of the manufacturer*	√**	√	√**	√
- Halal logo (if required)*	√	√	√**	√
- Expiration date*	√	√	√	√
- Distribution permit number*	-	√	-	√
B. Other parts of the label. Statements or information that may be included in other sections.				
- List of ingredients*	√**	√	√**	√
- Production date and code*	-	√	√	√
- ING table (if required)*	-	√	-	√
- BPOM 2D Barcode statement*	-	√	-	√
- Warning statement (if required)	-	√	-	√
- Serving suggestion (if available)	√	√	-	√
- Storage instructions	√	√	√	√

Note: * = mandatory element; ** = incomplete; - = not available

The requirements for processed food distribution permits have been covered in 25 aspects and 68 clauses listed in the Decree of the Head of BPOM Number HK.02.02.1.2.01.22.63 of 2022 concerning Guidelines for Inspection of Processed Food Production Facilities, so that by completing/correcting all major and minor findings, as shown in Table 5, UMKM 1 and 2 have met the technical requirements for registration of distribution permits.

3.3. Microbial Content of Yogurt After Coaching

The results of *Salmonella* testing on yogurt products after coaching at MSMEs 1 and 2 showed negative results. The results of *Salmonella* testing on yogurt products after coaching at MSMEs 1 and 2 showed negative results. The results of *Enterobacteriaceae* testing on yogurt products met the requirements (<10 colonies/g) in accordance with BPOM Regulation No. 13 of 2019 concerning the Maximum Limit of Microbial Contamination in Processed Foods. The main source of *Salmonella* sp. infection in the yogurt processing process is fresh milk raw materials that are not heated properly (Satria *et al.*, 2021). Before coaching, MSME actors 1 and 2 had not calibrated the thermoindicator or thermometer to measure the temperature of the pasteurization process, so the heating temperature of fresh milk was likely invalid. After coaching, the thermoindicator/thermometer calibration procedure and program were implemented to prevent the heating temperature from not being in accordance with the established procedures.

Coliform and *Enterobacteriaceae* are indicator bacteria of poor hygiene and sanitation conditions in the food processing process (Tsai *et al.*, 2022). Bacteria of the genera *Enterobacter*, *Shigella* and *Klebsiella* are groups of coliform

bacteria. The presence of coliform bacteria can be an indicator of animal and human fecal contamination (Widyanti & Fatmawati, 2022). Water is a medium highly susceptible to fecal contamination. Water testing is very important to monitor water sanitation. Actors of MSME 1 and 2 did not conduct water quality standard tests for sanitation and washing tools before coaching, and clean water quality standard tests were carried out after coaching.

Enterobacteriaceae contamination can occur on unclean worker hands when handling products. This can happen because the hand washing facilities are not equipped with soap, drying cloths, and instructions on how to wash hands as happened in MSME 2. The hand washing facilities after coaching have equipment, so that employees can wash their hands properly. Cross contamination can also occur during the handling of fresh milk and yogurt processing, so that *Salmonella* sp. and *Enterobacteriaceae* can be transmitted from infected humans to yogurt products (Satria *et al.*, 2021). Routine health checks for personnel are very important to prevent transmission of disease from humans to food. Programs and records for employee health checks have been implemented by MSME 1 and 2, with coaching.

4. CONCLUSION

The results of the observation of the implementation of CPPOB show that of the seven yogurt MSMEs in Bogor Regency whose products do not yet have a processed food distribution permit, one MSME (14.3%) received an A rating, one MSME (14.3%) received a B rating, one MSME (14.3%) received a C rating and four other MSMEs (57.1%) received a D rating. Guidance for MSME 1 and MSME 2 showed a decrease in the number of non-conformities, namely in MSME 1 from four minor non-conformities and three major non-conformities to 0, in MSME 2 from seven minor non-conformities and four major non-conformities to 0. The requirements for registering a distribution permit for MSME 1 and 2 have been met. The results of the verification of yogurt products showed that in the two samples there was no *Salmonella* sp. and the *Enterobacteriaceae* content was still within the maximum limit of microbial contamination permitted (<10 colonies/g).

Recommendations for yogurt MSMEs are that in running a yogurt processing business, they must have a strong commitment to implementing CPPOB from the preparation of raw materials to the distribution of products to consumers, for this reason, business actors need to explore knowledge and skills related to regulations on CPPOB and processed food distribution permit requirements that can be obtained through technical guidance/socialization online/offline or through the official BPOM website. Recommendations for further research are the impact of issuing processed food distribution permits on MSMEs on increasing production, sales volume and marketing expansion needs to be carried out. Research can also be conducted to determine the consistency of the implementation of CPPOB after the issuance of processed food distribution permits on MSMEs.

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