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Gap Analysis of Good Manufacturing Practices for The Household Industry (CPPB-IRT) Implementation at MN Sambal MSMEs, Bogor

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Micro, Small, and Medium Enterprises (MSMEs) in the food sector play a crucial role in supporting food security and local economic growth. A common challenge faced by these businesses is the lack of implementation of Good Manufacturing Practices for Household Industry (CPPB-IRT) that This hinders their ability to obtain the SPP-IRT (Household Industry Food Production Certificate), which is essential for ensuring food safety and quality. MN Sambal, an MSME producing chili sauce as a food product susceptible to spoilage and poses a significant risk to consumers if not handled properly. To assess MN Sambal's compliance with CPPB-IRT standards, research data was collected through observation, interviews, checklists, and literature review. The gap analysis based on BPOM regulation No. HK.03.1.23.04.12.2206 2012 revealed that MN Sambal achieved a high level of compliance are 83.8% conformity aspect and 16.2% non-conformity aspect. These non-conformities were identified in six aspects: Hygiene and Sanitation Facilities and Activities, Process Control, Food Labelling, Supervision by Responsible Parties, and Employee Training. Based on these nonconformities, it is recommended that MN Sambal undertake corrective actions to enhance CPPB-IRT implementation and increase its chances of obtaining the SPP-IRT certification, which will ultimately lead to increased product value and market expansion.

Keywords: analysis, CPPB-IRT, MSME, MN Sambal, SPP-IRT

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are economic entities whose existence dominates the national economy (Kusmanto *et al*., 2019). In Indonesia, the definition of MSMEs is set in Law Number 20, 2008, on MSMEs. In this law, the criteria used to define MSMEs as outlined in Article 6 are net asset value or asset value excluding land and building of business premises, or annual sales. Under these criteria, Micro Enterprises (MIE) is a business unit with an asset value of at most Rp50 million, or with annual sales of maximum Rp300 million; Small enterprises (SE) is a business unit with an asset value of more than Rp50 million up to a maximum of Rp500 million, or having annual sales of more than Rp300 million up to a maximum of Rp2.5 billion; and Medium enterprises (ME) is a company with a net worth value of more than Rp500 million up to a maximum of Rp10 billion, or have annual sales of over Rp2.5 billion to a maximum of Rp50 billion (Tambunan, 2019). Alternatively, the Indonesian Central Bureau of Statistics (BPS) uses the number of workers as a measure to differentiate the scale of business between MIE, SE, ME, and LE. MIE is a business unit with permanent workers up to 4 people; SE between 5 to 19 workers; and ME from 20 to 99 people. Companies with a workforce of more than 99 people are categorized as Large Enterprise (LE) (Tambunan, 2019). MSMEs consist of various sectors, one of which is the food/culinary sector. MSMEs in this sector play a crucial role in supporting food security and local economic growth. In their implementation, MSMEs still need to be continuously developed to help increase national income (Suci, 2017). Food MSMEs cover a wide range of businesses, from snack producers to traditional food stalls, and have a significant impact on

economic development and the preservation of local wisdom. With more and more food industries producing high-quality, safe, and consumable food products for the public, the consumers of these food products will be protected from various dangers that can threaten human health and avoid food products that have quality deviations (Toni & Sirajuddin, 2023).

Packaged or instant sambal has become one of the most sought-after products in the market. This is due to the characteristics of Indonesian society, where people generally prefer spicy food. Consequently, there has been an increasing market demand for packaged sambal, particularly from consumers seeking convenience such as students and working women who also double as housewives. (Suwandono *et al*., 2021). Critical control points in sambal production include raw material selection, addition of food additives, cooking, and the washing and sterilization processes of packaging bottles (BPOM, 2017)

Food and Drug Monitoring Agency (BPOM), implemented Good Manufacturing Practices for Household Industry (CPPB-IRT) as a standardized framework for MSMEs in the food production sector. This standard provides guidelines and requirements to ensure the quality, safety, and suitability for consumption of food products. Compliance with CPPB-IRT is a prerequisite for obtaining the Household Industry Management Permit (SPP-IRT) (Putri *et al*., 2015). Implementing CPPB-IRT is a strategic approach to foster the growth of small-scale processing industries. Business legality, as represented by the SPP-IRT, offers a pathway to regulatory certainty and government protection. It not only establishes the business owner's legitimacy but also enhances the business's competitive standing in the market. In essence, business legality provides the necessary credentials for a business to be recognized and accepted by the community (Indrawati & Rachmawati, 2021). Business legality enables entrepreneurs to more easily access financing to significantly expand their businesses, improve performance, and strengthen their competitive position (Prameswari, *et al*., 2023).

A common challenge faced by MSMEs is non-compliance with CPPB-IRT standards. This issue often arises from various factors, including limited knowledge about safety regulations and permits, low awareness of their significance, insufficient funds, and other constraints. Many MSMEs still do not have this permit due to a lack of understanding of the P-IRT licensing procedures (Fadilah & Setiawan, 2023). This non-compliance often results in subpar product quality and safety, hindering MSMEs from obtaining SPP-IRT.

One effective approach to assist MSMEs in enhancing their adherence to CPPB-IRT standards is to conduct a comprehensive gap analysis. This process involves observing and assessing the current state of their implementation in comparison to the regulatory requirements outlined in the CPPB-IRT standards. By identifying and addressing these gaps, MSMEs can streamline the process of obtaining the SPP-IRT certification. MN Sambal serves as a case study for this research. The primary objective is to evaluate the CPPB-IRT implementation of MN Sambal's compliance with requirements and pinpoint specific areas for improvement.

METHODS

The research method on this research was conducted using a qualitative descriptive method. Primary data will be collected directly in the field through on-site observations and interviews with business owners and/or workers involved in the production process. Secondary data will be gathered from a literature review, including books and relevant literature.

A gap analysis was conducted based on Regulation of the Head of the National Agency of Drug and Food Control of the Republic of Indonesia Number HK.03.1.23.04.12.2206 of 2012 Concerning Good Manufacturing Practices for Home Industries and using checklist to assess the implemented CPPB-IRT based on Regulation of the Head of the National Agency of Drug and Food Control of the Republic of Indonesia Number HK.03.1.23.04.12.2206 of 2012 on the Inspection Procedures for Home Industry Food Production Facilities. This analysis involved a checklist-based comparison of the observed practices against the specified standards. The results were categorized into four levels of non-conformity; critical (were defined as deviations from "must" CPPB-IRT criteria), Serious (referred to

failures in meeting "should" CPPB-IRT requirements), major (indicated non-compliance with "shall" CPPB-IRT criteria) and minor (represented deviations from "can" CPPB-IRT aspect).

RESULTS AND DISCUSSION

Identification of Food MSMEs

The first stage of this research is the selection of MSME to be assisted in applying for the SPP-IRT certification based on two factors. The first factor is the author's place of residence. As the author resides in Bogor City, the mentoring process will be more manageable due to the close distance and easy access for direct inspections of the production facilities. The second factor is that the selected MSME does not yet have the SPP-IRT certification but is open to receiving support to identify the barriers preventing them from obtaining this certification. This allows for a gap analysis to be conducted and an improvement plan to be developed to help them register and acquire the SPP-IRT. Based on the search results, the MSME that meets these criteria is MN Sambal, which produces packaged MN Sambal products with various fillings.

Gap Analysis of CPPB-IRT Implementation

The gap analysis of CPPB-IRT compliance was conducted at MN Sambal to assess the implementation of CPPB-IRT. The analysis compared the existing facilities and production processes against the regulatory requirements. This checklist comprises 14 assessment aspects and a total of 37 clauses. The results of the CPPB-IRT compliance assessment for MN Sambal presented in Table 1.

Table 1. CPPB-IRT Compliance Assessment of MN Sambal

No.	Aspect of CPPB-IRT	Total Criteria	Conformity	Non-conformity
1	Production Location and Environment	1	1	0
2	Building and Facilities	2	2	0
3	Production Equipment	3	3	0
4	Water Supply or Water Provision Facilities	2	2	0
5	Hygiene and Sanitation Facilities and Activities	4	2	2
6	Employee Health and Hygiene	4	4	0
7	Maintenance and Hygiene and Sanitation Programs	4	4	0
8	Storage	2	2	0
9	Process Control	5	4	1
10	Food Labeling	2	1	1
11	Supervision by Person in charge	2	1	1
12	Product Recall	2	2	0
13	Record Keeping and Documentation	2	2	0
14	Employee Training	2	1	1
	Total	37	31	6
	Percentage of implementation		83,8%	16,2%

Based on the data obtained from the gap analysis, the percentage of CPPB-IRT implementation at MN Sambal is 83.8%. This indicates that CPPB-IRT has not been fully implemented by MN Sambal, and it can be stated that there are still requirements that have not been met by MN Sambal resulting in the product quality and safety not being guaranteed.

Location and Environment Production

MN Sambal is located in Bantar jati, North Bogor District, Bogor City, far from pollution or contamination sources, including temporary and final waste disposal sites. The MN Sambal production process at this MSME is carried out in a kitchen located inside the owner's house. The kitchen used for production is a separate kitchen from the owner's personal kitchen, which is used for daily cooking

activities. Based on the observations that have been conducted. The production environment is clean and well-maintained because it is located inside the house and is cleaned regularly every day. Food production facilities are prohibited from being located in an unhygienic area that may compromise the safety, quality, and suitability of food products (Toni & Sirajuddin, 2023). The safety of food is greatly influenced by the environment. Contaminated soil, water, and air can lead to pollution in crops, vegetables, fish, animals, and more (Jiang *et al*., 2021)

Building and Facilities

The building and facilities of an MSME should ensure that food is not contaminated by physical, biological, and chemical hazards during the production process and should be easy to clean and sanitize. The production facility of MN Sambal is still located within the owner's home. The results of the observation show that production area was originally the owner's main kitchen and was integrated with the personal kitchen used daily. The owner has separated the production area from the personal kitchen but is still located in the same house. The building and production facilities are not very large but are easy to clean and maintain and do not produce other products besides food products. The floor, walls, and ceiling of the production area are well-maintained and cleaned regularly. The windows in the production area are cleaned periodically and have been covered with a cloth cover to prevent contamination from outside. Well-maintained facilities support the food production process and prevent the spread of harmful microorganisms (Aini et al., 2019).

Production Equipment

Production equipment cleanliness is a crucial factor that must be considered. The equipment should also be made of easy-to-clean materials, and a regular cleaning schedule should be implemented to ensure equipment cleanliness, the quality and safety of the food produced. Based on a direct on-site observation, all equipment used by MN Sambal has been verified to be clean and rust-free. A cleaning schedule is implemented before the production process begins to ensure that the equipment is clean and is cleaned again immediately after use. The layout of food production facilities is designed to prevent cross-contamination. Production equipment that comes into direct contact with food should be designed, constructed, and positioned in a manner that ensures the quality and safety of the food produced (Ali *et al.*, 2021). Cutting boards, tables, kitchen supplies, and other equipment, contact with food infected by bacteria and viruses, as well as polluted water and raw material pollutants, also become vectors that introduce contaminants (Qasim *et al*., 2024).

Water Supply or Water Provision Facilities

Water supply for various production processes at MN Sambal is sourced from the Public Water Company. The water used must be ensured to be clean and available in sufficient quantities to meet production requirements. Although the water used for production has not undergone laboratory testing, its quality is consistently evaluated sensorily before use. The water used in the production process is always verified to be colorless and odorless, thus complying with the applicable clean water standards. The water source used for production processes should be adequate and meet all required standards. A safe and clean water source must be free from contamination to prevent various health problems, especially digestive disorders such as diarrhea (Toni & Sirajuddin, 2023)

Hygiene and Sanitation Facilities and Activities

MN Sambal has facilities for cleaning ingredients and equipment, and the toilets are located appropriately, but a significant gap was observed during the field visit: the absence of complete handwashing facilities equipped with specialized hand soap and hand dryers. The trash cans are clean but don't have lids. Improved hygiene and sanitation facilities are necessary to maintain a clean production area and prevent cross-contamination of the products. Hygiene and sanitation practices aims to ensure food safety and protect consumers from illnesses (Fatimah *et al.*, 2022).

Employee Health and Hygiene

Food handlers can be a source of contamination for food products through direct contact, therefore they must pay attention to their health and hygiene to prevent contamination (Dewi & Anggraeni, 2022). MN Sambal is operated by the owner and one household assistant which prioritize hygiene and sanitation such as wear aprons and wash their hands before, during, and after the production process. Employees who are ill or have open wounds are prohibited from handling any parts of the product that come into direct contact with consumers. The business owner is responsible for overseeing employee hygiene and ensures that strict sanitation procedures. The maintenance of good employee health and hygiene guarantees that individuals who come into direct or indirect contact with food do not introduce contaminants (BPOM, 2012).

Maintenance and Hygiene and Sanitation Programs

Scheduled sanitation and hygiene programs are implemented to prevent cross-contamination of food products (Maghfira *et al*., 2023). Maintenance and sanitation programs for production facilities should be carried out regularly to prevent cross-contamination of processed food (Fatimah *et al.*, 2022). The sanitation and hygiene program implemented at MN Sambal has been running effectively. The owner regularly evaluates and maintains the program to ensure its ongoing effectiveness. Observations have shown that the production area is consistently clean, pest-free, and that production waste is properly managed. Hygienic food processing and compliance with applicable sanitation regulations are crucial factors in ensuring food safety (Wahyuningsih & Sulistiyorini, 2021)

Storage

Raw materials and packaging materials at MN Sambal are stored on clean shelves, elevated from the floor and walls to prevent contamination. Perishable items such as squid, anchovies, and other fillings are stored in a refrigerator located in the production room. Finished products are placed on separate shelves away from raw materials and packaging. Separating the storage of dry, wet, raw, and finished products is crucial in preventing cross-contamination (Rianti *et al*., 2018). The storage room must be kept clean, the chiller door must always be closed, the room temperature is kept stable, and every product that enters the chiller must be labeled and follow the FIFO (First In First Out) principle by referring to the date listed on each basket of materials or products (Nahda & Fitriani, 2023).

Process Control

The production process is carefully monitored to prevent product quality issues, like cross-contamination (Nahda & Fitriani, 2023). Each stage of production is supervised to prevent decreasing product quality and safety. MN Sambal does not have a documented specification for its raw materials. Although the owner has made efforts to maintain the quality of the raw materials, without written records, it is difficult to trace the origin and quality of the raw materials in detail. However, without a production flow chart, the production process is highly dependent on the MN Sambal and is not standardized. The purpose of process control is to reduce the potential of products that do not meet the criteria for food safety and quality (Mela & Rizki, 2023). Contamination occurred during the slicing and packaging of ready-to-eat foods, leading to the presence of *Staphylococcus aureus* on both food and food handler gloves (Syne *et al*., 2013)

Food Labeling

Food products require labels containing general product information to facilitate consumer understanding. Based on observations, the label on MN Sambal product is incomplete and missing several crucial information and does not conform to requirement. The label only includes the product name. Other components such as product type, producer address, list of ingredients or composition, net weight/volume, expiration date, and production code are not included on the label. The absence of an expiration date on product labels a significant health risk to consumers. This necessitates immediate action from producers, especially MSMEs, to rectify their product labels (Fadhila *et al.*, 2024). Many producers do not fully understand the importance of food product labeling. While most have included

labels, these labels do not yet comply with the requirements and regulations applicable to home industries (Imani *et al.*, 2023).

Supervision by Person in Charge

Internal control is a supervisory process conducted throughout the entire production chain with the objective of enhancing product quality and overall company performance (Hermansyah *et al*, 2013) A responsible person is needed to supervise all stages of the production process (BPOM, 2012). The owner and worker at MN Sambal may not have directly related educational backgrounds but they are familiar with basic production processes, sanitation practices, and food safety. To meet the requirements for CPPB-IRT certification, at least one individual from the SME must hold a food safety training certificate.

Product Recall

Food product recall is an action taken to halt the distribution of food that is suspected of causing foodborne illness or poisoning, or that does not comply with food safety laws and regulations (BPOM, 2012). Food product recalls are initiated when there are complaints that the product has caused illness or poisoning in consumers. A standard operating procedure for food recalls can be prepared as a precaution in case of unforeseen circumstances. MN Sambal does not yet have a written standard operating procedure for product recalls. The products of MN Sambal are still distributed in the Bogor area and its surroundings. There have been no complaints received by the MN Sambal regarding product safety issues experienced by consumers, so MN Sambal has never had to conduct a product recall.

Record Keeping and Documentation

Documentation aims to maintain product quality by providing a detailed record of all production processes, from raw material input to finished product output. Records and documentation are necessary to facilitate tracing in case of unexpected problems (Fadhila *et al.*, 2024). MN Sambal has not yet implemented maximum recording for the receipt of raw materials because the raw materials are still purchased from traditional markets around the area, so there are no purchase receipts that can be kept as documentation. The owner of MN Sambal always ensures that the raw materials used meet the specifications, are safe, and are not expired. The recording of finished products and shipments has been documented.

Employee Training

The quality of processed food is influenced by the food handlers' understanding of hygiene and sanitation practices. Employees who lack knowledge in hygiene and sanitation pose a potential threat to the safety and quality of the products (Mela & Rizki, 2023). Employee training can be conducted by the SME owner or by an SME employee who has knowledge of production processes and sanitation and hygiene principles and practices. Since none of the representatives of Sambal Mami Na have a Food Safety Training Certificate (PKP), a training program for employees cannot yet be implemented.

Non-conformity of CPPB-IRT Implementation of MN Sambal

Six non-conformities were found in the MN Sambal, consisting of two Serious non-conformities and four critical non-conformities. Corrective actions are required to address these issues and improve the overall implementation of CPPB-IRT. This will ensure that the produced products are safe and of high quality. Consequently, it is expected that MN Sambal will be able to obtain SPP-IRT. The non-conformity category of CPPB-IRT implementation of MN Sambal consist of Critical dan Seriously category that are summarized in Table 2 below.

Table 2. CPPB-IRT Compliance Assessment of MN Sambal

No.	Aspect of CPPB-IRT	Non-conformity Category
1	There is no handwashing facilities equipped with soap and hand dryers	Serious
2	There are no covered waste disposal bins available	Critical
3	IRTP does not have and not following the flow chart Food Production	Serious
4	Food labels are not including product name, list of materials used, net weight/contents net, name and address IRTP, expired date, production code and PIRT number	Critical
5	The IRTP does not have a qualified person in charge with a food safety certification	Critical
6	The IRTP does not have a food safety training program for its employees	Critical

The first serious non-conformity was the lack of a complete handwashing facility equipped with soap and a hand dryer. After discussion with the business owner, the corrective action taken was to provide the handwashing facility with specialized hand soap and a hand drying towel hung beside the sink. Yunita (2013) stated that dirty and incomplete hygiene and sanitation facilities can affect the quality of food to be consumed. The shared use of soap can indirectly spread diseases in as many as 33% of cases (Muafidah *et al.*, 2017)

The second non-conformity, categorized as critical, was the absence of a covered waste bin in the production area. Waste bins provided in the production area must be covered to prevent contamination of the products. The presence of an uncovered waste bin is considered a critical finding as it can have a direct impact on the safety of the products produced. This finding was immediately corrected by the MN Sambal owner by replaced the waste bin with a covered one. It is recommended to separate wet and dry waste for effective waste management (Andina, 2019).

The third nonconformity with the crucial category was identified is the absence of a production flow chart. This document is crucial for ensuring that all production processes adhere to established standards and maintain consistent product quality. Given the various sambal variants with distinct production stages, we have developed specific flowcharts for each variant. The flow chart of the food production process should clearly depict each stage of the production process from the arrival of raw materials to the final product (Prayitno & Tjiptaningdyah, 2018)

The fourth non-compliance is the label used by MN Sambal does not comply with Head of BPOM RI Regulation No. 31 of 2018 concerning Processed Food Labeling. Food product labels can provide consumers with information about the product, so important information must be stated on the label. Food labels are the first informative tool found by the customers during shopping, and are informative in terms of ingredients, nutrient content, and the presence of allergens of the selected product (Martini & Menozzi, 2021). The improvement made was to redesign the product label with contain complete compositional information.

The fifth nonconformity is the absence of a person in charge who has a food safety education certificate (PKP) and this is related to the sixth nonconformity, namely the absence of a food safety training program for employees at the MSME. Both of these nonconformities are critical nonconformities because they relate to food safety. The fix for these two nonconformities is by registering MSMEs to take part in food safety education (PKP) held by the Bogor City Health Service or related agencies. The training of handlers and those involved in the production process is essential to guarantee the microbiological quality of the meals (Qasim *et al*., 2024).

CONCLUSION

Based on the assessment of MN Sambal's compliance with the CPPB-IRT based on Regulation of the Head of the National Agency of Drug and Food Control of the Republic of Indonesia Number

HK.03.1.23.04.12.2206 of 2012 Concerning Good Manufacturing Practices for Home Industries and using checklist to assess the implemented CPPB-IRT based on Regulation of the Head of the National Agency of Drug and Food Control of the Republic of Indonesia Number HK.03.1.23.04.12.2206 of 2012, an 83.8% compliance rate was achieved, with a 16.2% non-compliance rate. Non-compliance issues were identified in six key areas, categorized as critical and serious: hygiene and sanitation, process control, food labeling, supervisory oversight, and employee training. To improve compliance, the following actions are recommended: provide a handwashing station equipped with specialized hand soap and a hand drying towel, replace waste bins with covered ones, develop specific flowcharts for each product variant, redesign product labels to include comprehensive compositional information, and participate in food safety training (PKP) with relevant agencies**.**

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