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Management Process Intervention to Improve the Performance of MSMEs in the Food Processing Sector (Study on CV Cucuruku Ceria)

Rifemi Ihza Nuzulla[1*], Irmayani Noer[1], Suraya Kaffi Syahfura[1], Beni Hidayat[1]
[1]Politeknik Negeri Lampung
Jl. Soekarno Hatta No.10, Bandar Lampung, Lampung 35144, Indonesia
*Corresponding Email: Irmayani_noer@polinela.ac.id

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ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) in Indonesia's food sector play a strategic role in economic development through employment, community empowerment, and food supply. However, food safety remains a major challenge due to profit-oriented practices, limited knowledge, weak supervision, and financial constraints. This study aims to examine the implementation of Good Manufacturing Practice (GMP) as a management intervention to improve MSME performance, competitiveness, and sustainability. The research was conducted over four months on a developing MSME in Lampung, Indonesia CV Cucurutuku Ceria which received support from the Netherlands-based Programma Uitzending Managers (PUM). GMP evaluation referred to Ministry of Industry Regulation No. 75 of 2010, starting with an initial assessment followed by consistency monitoring. Barriers to implementation were analyzed using the root cause analysis method, specifically the why-why technique. The results show that GMP compliance increased from 66% to 98% within three months, supported by management commitment, external funding, and problem-solving strategies. This study concludes that GMP can be effectively implemented in MSMEs with structured guidance, external collaboration, and consistent evaluation, contributing to improved food safety standards and business sustainability.

Keywords: Competitiveness; GMP; MSME Performance; Sustainability; Why-Why Analysis

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INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) in Indonesia play a strategic role in the national economy, including job creation, community empowerment, and reducing economic inequality. Food-sector MSMEs also contribute to food security, particularly in terms of access to and availability of food. According to Lisnawati (2023), MSMEs significantly contribute to the national economy by employing more than 97% of the workforce and accounting for 61.97% of Indonesia's GDP, valued at IDR 8,500 trillion in 2020. Furthermore, MSMEs help strengthen the competitiveness of the local food industry, supporting the development of national food security, especially through food diversification. Other benefits of food-sector MSMEs include supplying local food, empowering farmers, creating employment opportunities, and promoting social change and food resilience. However, MSMEs still face challenges, particularly in the area of food safety, due to several factors such as profit-oriented practices, limited understanding, lack of supervision, and insufficient capital. Fajarwaty and Jukes (2022) noted non-compliance among food MSMEs in Indonesia, caused by limited knowledge particularly regarding food safety standards, a lack of government oversight, and a profit-driven mindset that prioritizes low-cost operations.

This complex issue compels MSMEs to implement management process interventions as part of a strategy to improve their management systems. One example of such an intervention in the area of food safety is the implementation of Good Manufacturing Practices (GMP). GMP is a set of guidelines for producing food in a proper, hygienic, and standardized manner. The benefits of implementing this system are expected to enhance the competitiveness of food-sector MSMEs, reduce the frequency of claims, returns, reprocessing, and rejections, and enable a faster response in the event of food safety issues (Bare International, 2022). The GMP standard used in this study refers to the Regulation of the Minister of Industry No. 75/M-IND/PER/7/2010, which is expected to support Indonesia's industrial sector across all areas—not only food safety, but the broader industrial landscape as well. With this foundation, MSMEs are expected to become more competitive alongside other industries.

The implementation of GMP is a fundamental step in applying a Food Safety Management System (FSMS). FSMS is an integrated management system designed to identify, evaluate, and analyze risks in order to control food safety hazards throughout the production, distribution, and consumption chain (International Organization for Standardization, 2018). Companies that implement this system are recognized for their food safety practices and are eligible to receive certification. Food safety certification can enhance consumer trust and strengthen a business's competitiveness in the market. However, challenges in implementing such a management system include limited resources, knowledge, and infrastructure (Halim et al., 2023), as well as consistency in its application. Therefore, a problem-solving method is needed to ensure that GMP implementation in small-scale industries (MSMEs) can be both feasible and consistently maintained, considering that GMP is generally applied in large companies with substantial capital. One such method is root cause analysis, specifically the why-why analysis technique. The main principle of this method is to prevent the recurrence of problems by identifying and addressing their root causes (Lawless, 2024).

CV Cucurutuku Ceria, also known by its brand Ayam Sambal Ladas, is a growing MSME located in Lampung, Indonesia. The selection of CV Cucurutuku Ceria as the research object was based on preliminary research conducted in October 2024, which showed a GMP implementation score of 66%, indicating the need for improvement in applying GMP standards. In addition, this MSME is one of the funding recipients of the

Programma Uitzending Managers (PUM) from the Netherlands, an international organization that collaborates with MSMEs globally. These two considerations formed the basis for selecting this MSME for a management intervention assessment, given that GMP implementation is typically carried out in large companies with substantial capital. Therefore, this MSME presents a potential case for piloting GMP application. The aim of this study is to test the implementation of GMP practices in an MSME as a form of management intervention to improve performance, competitiveness, and business sustainability. The study also applies the root cause analysis method to address problems encountered during implementation.

LITERATURE REVIEW

Micro, Small, and Medium Enterprises (MSMEs)

Micro, Small, and Medium Enterprises (MSMEs) are business units that utilize local natural resources, traditional skills, and regional arts in the production of goods and services. According to Halim (2020), the distinctive characteristics of MSMEs include easy access to raw materials, the use of simple technology, and basic skills that are usually passed down from generation to generation. This category of business is distinguished based on ownership criteria, net asset value, and annual sales revenue. Generally, MSMEs are categorized by their asset value. The following are the characteristics of MSMEs based on assets and turnover.

Table 1. The Characteristics of MSMEs Based on Assets and Omzet

Business Scale	Old Definition (Law No. 20 of 2008)	New Definition (Government Regulation No. 7 of 2021)
Micro Enterprise	Assets ≤ IDR 50 million	Assets ≤ IDR1 billion
	Omzet ≤ DR 300 million	Omzet ≤ IDR2 billion
Small Enterprise	Assets > IDR50 million – IDR500 million	Assets > IDR1 billion – IDR5 billion
	Omzet > IDR300 million – IDR2,5 billion	Omzet > IDR2 billion – IDR15 billion
Medium Enterprise	Assets > IDR500 million – IDR10 billion	Assets > IDR5 billion – IDR10 billion
	Omzet > IDR2,5 billion – IDR50 billion	Omzet > IDR15 billion – IDR50 billion
Large Enterprise	Assets > IDR10 billion	Assets > IDR10 billion
	Omzet > IDR50 billion	Omzet > IDR50 billion

Note: Assets (excluding land and business premises buildings); Omzet (within 1 year)
Source: Law No. 20 of 2008 and Government Regulation No. 7 of 2021

The existence and role of MSMEs have become a key driver of Indonesia's economic sector with the support of the government. Moreover, MSMEs in Indonesia have proven capable of sustaining the national economy, especially during times of crisis. According to Hasnan et al. (2022), MSMEs successfully survived the 1998 monetary crisis as well as the Covid-19 pandemic. According to data from the Ministry of Cooperatives and SMEs in 2021, around 64.2 million Micro, Small, and Medium Enterprises (MSMEs) were operating in Indonesia. These businesses played a significant role in the country's economy, contributing about 61.07% to the national GDP equivalent to roughly IDR 8,573.89 trillion. The annual growth of MSMEs has had a positive impact by creating new job opportunities, thus helping to reduce the unemployment rate in Indonesia. Their existence and role serve as a primary driver of the Indonesian economy, supported by government efforts. This support may come in the form of improved facilities, product branding, as well as financial assistance and training.

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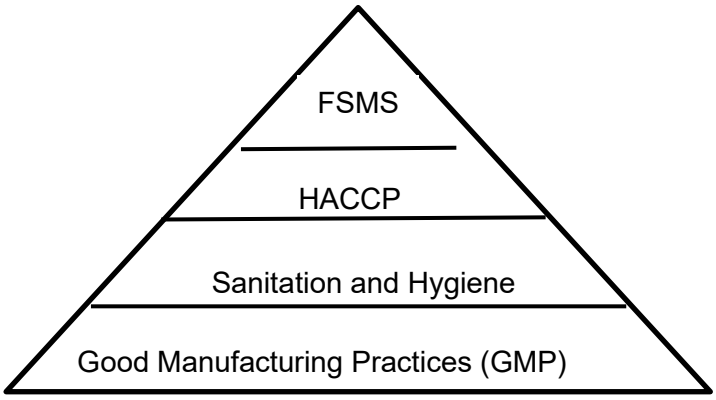
Food Safety Management System (FSMS) and Good Manufacturing Practice (GMP)

The Food Safety Management System (FSMS) is a governance system for food safety that identifies, evaluates, and controls food product threats to ensure that the products produced are safe for consumption (Babeker et al., 2022). The goal of implementing this system is to help companies protect competitive markets, customers, and the public, ensure continuous prevention of foodborne diseases, promote safe food for consumption, Building customer trust and a strong market image. Before discussing FSMS in more detail, every organization in the food industry must implement Good Manufacturing Practices (GMP), which serves as the foundation for food safety systems. The following is a depiction of how GMP and FSMS are related.

Figure 1. Food Safety System Pyramid



Source: Ministry of Health of the Republic of Indonesia, 2022

Figure 1 is a food safety system pyramid, showing that GMP forms the foundational base before progressing to FSMS. PRP, or Prerequisite Program, is the basic requirement program needed by organizations and the entire food chain to maintain food safety, such as Good Manufacturing Practice (GMP).

GMP, in Indonesian, refers to Good Manufacturing Practices, which are the minimum sanitation and processing requirements needed to ensure that food products are safe. As stated by Sucofindo (2023), GMP is a set of operational guidelines that regulate the food production process to ensure the production of safe, high-quality, and consumable products. GMP has been implemented in the food industry since 1978 by the Ministry of Health under regulation 23/Men.Kes/Skji/1978, which relates to Guidelines for Good Food Production. Additionally, an update to this regulation was issued by the Ministry of Industry of the Republic of Indonesia in regulation 75/M-Ind/Per/7/2010.

The main principle is that quality is formed during the process and is not only tested at the end, but quality is built. This means that product quality assurance is not just about meeting the desired specifications, but about creating the product with specific procedures under the same conditions during production. According to Purnomo and Mas'ud (2020), GMP controls several aspects such as facility quality control, raw materials, production processes, product testing, labeling, segregation, storage, and handling supplier complaints.

The implementation of Good Manufacturing Practices (GMP), especially in the food industry, can help reduce operational costs through standardized procedures and more effective resource management. The benefits of implementing GMP, according to Bare International (2022), include building consumer trust by ensuring that products meet

safety and quality standards in accordance with regulations, such as Minister of Industry Regulation No. 75/M-IND/PER/7/2010. Furthermore, GMP implementation can help reduce the risk of customer complaints, non-standard products, and reprocessing due to production errors, as companies that have adopted this system typically implement strict inspections and prompt corrective actions.

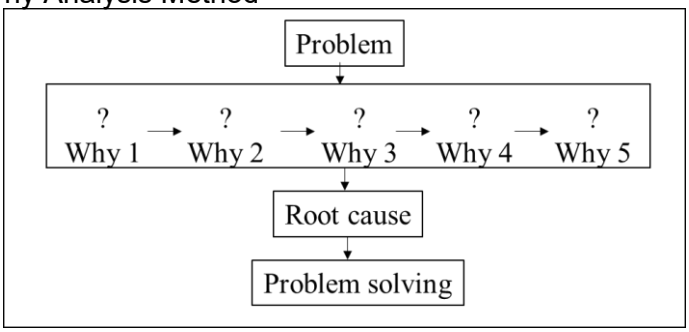
Purnomo and Mas'ud (2020) state that GMP controls several aspects, such as facility quality control, raw materials, production processes, product testing, labeling, segregation, storage, and handling supplier complaints. Required conditions include selecting factory locations away from contamination, buildings and facilities that are easy to clean, and equipment designed to prevent cross-contamination. Other conditions include the use of safe cleaning agents, an effective pest control system, employee personal hygiene, and quality control at each production process to ensure standardized and high-quality products.

Root Cause Analysis Method - Why-Why Analysis

The Root Cause Analysis (RCA) method is a problem-solving technique that encourages deep thinking through repeated questioning, typically five times, until the root cause of the issue at each layer of the problem is identified. This method is simple but quite effective in identifying the cause of a problem without requiring complex analysis (Majka, 2024).

This method was first developed in Japan around the 1930s by Toyota Motor Corporation. The analysis was developed by Sakichi Toyoda, the founder of Toyota Industries Co., Ltd., and later promoted by Taiichi Ohno, a key figure in the development of the Toyota Production System (TPS) (Lawless, 2024). The purpose of using this method is to reduce waste related to production, increase productivity, and ensure that the products produced are standardized. This method was initially used as an essential component of Toyota's problem-solving training and its overall philosophy of continuous improvement, known as Kaizen. There is a positive relationship between the use of this problem-solving method and improvements in productivity, quality, speed, flexibility, and the overall effectiveness of equipment (Sichinsambwe et al., 2023). Below is an illustration of the technique used in this analysis method.

Figure 2. Why-Why Analysis Method



Source: Lawless (2024)

The process begins with the first question, which is to ask why the problem occurred. The second question follows by asking why the answer to the first question happened, and this step is repeated up to the fifth question. Each "Why?" question should be aimed at deepening the understanding of the previous answer in order to uncover the true root cause of the problem. The key to using the 5 Why analysis method effectively is persistence in uncovering the true root cause that can be addressed. The final step, after identifying the root cause, is to develop and implement a solution to prevent the problem

from recurring. The implemented solution should be followed by monitoring to ensure the issue is fully resolved (Majka, 2024).

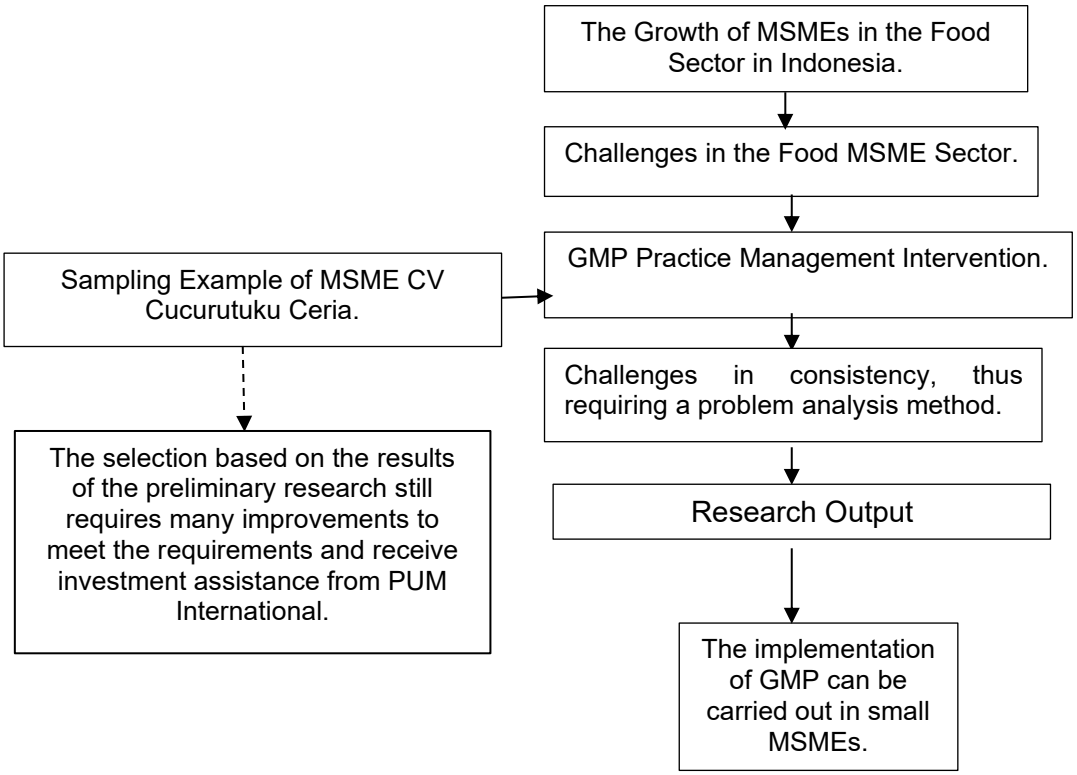
Hypotheses Development

The implementation of GMP through management intervention can be effectively carried out in small-scale MSMEs and its consistency can be maintained by using the root cause problem-solving method known as why-why analysis.

Conceptual Framework

The study framework model is depicted in Figure 3.

Figure 3. Research Framework



RESEARCH METHOD

The research was conducted at CV Cucurutuku Ceria, better known by its brand "Ayam Sambal Ladas," which is one of the MSMEs (Micro, Small, and Medium Enterprises) providing fried chicken products in Bandar Lampung. Ayam Ladas has two outlets located in Way Halim and Enggal. This study focused on the production house of CV Cucurutuku Ceria in the Way Halim area, Bandar Lampung, Indonesia. The research was carried out from September until April 2025.

The GMP (Good Manufacturing Practices) assessment was directed at the key person (the company's decision-maker) through interviews and sample observations. The population in this study is CV Cucurutuku Ceria, and the sample consists of personnel directly involved in the series of production processes, from raw material reception to customer delivery. The problem-solving method used in this research is the Why-Why Analysis method, a technique for identifying root causes by repeatedly asking "why" up to a maximum of five times, in order to determine an effective solution.

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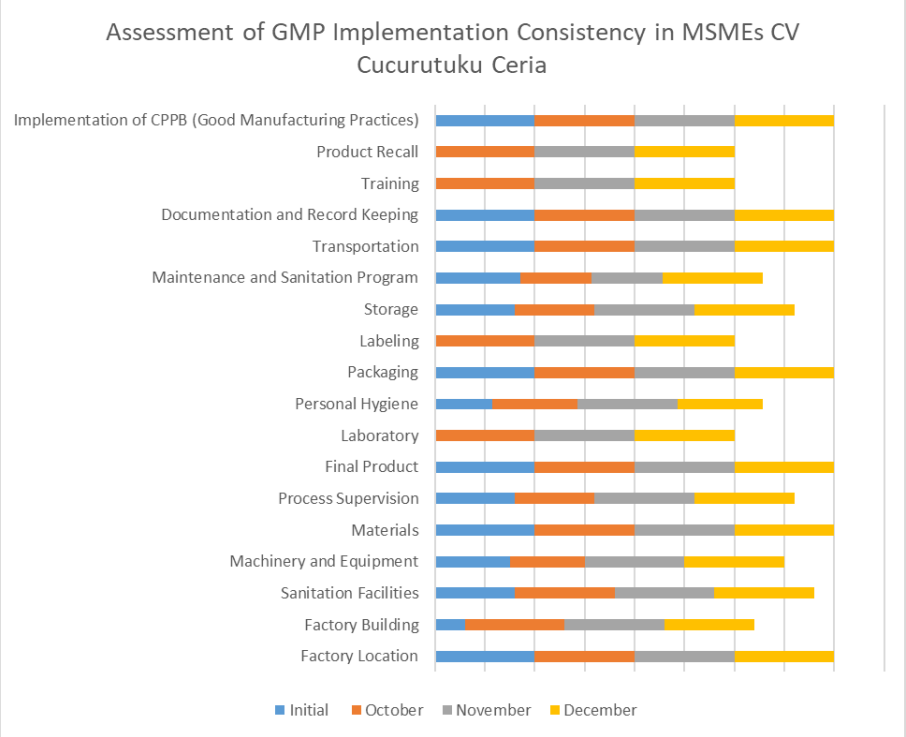
RESULTS

An essential standard within the Food Safety Management System (FSMS) pyramid is the consistent implementation of Good Manufacturing Practices (GMP), particularly in the food sector. This system governs various aspects, including location, building facilities, storage, processing, and customer handling. The following is the result of a three-month GMP implementation assessment based on the Regulation of the Ministry of Industry of the Republic of Indonesia No. 75/M-IND/PER/7/2010 at the SME CV. Cucurutuku Ceria (Ayam Sambal Ladas).

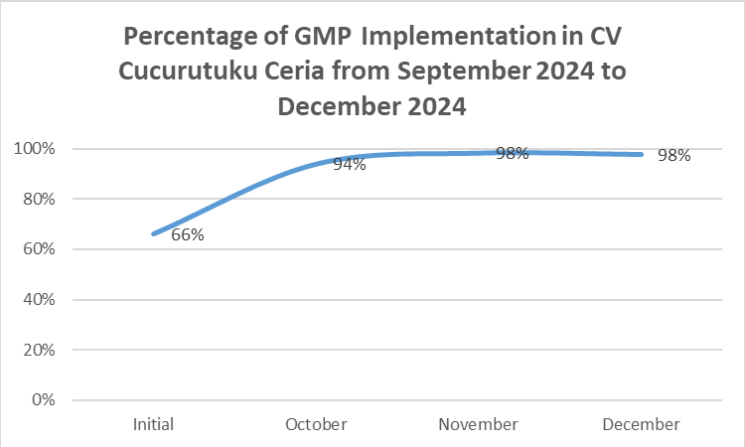
Figure 4. Assessment of GMP Implementation Consistency in the MSME CV Cucurutuku Ceria



Source: Data Processed by Author (2025)

The graph above illustrates the assessment of 18 compliance parameters for the implementation of GMP in accordance with the Ministry of Industry of the Republic of Indonesia Regulation No. 75/M-Ind/Per/7/2010 over time. The blue color represents the initial condition (September), orange represents October, gray represents November, and yellow represents December. At the start of the assessment, most aspects were still low, indicated by the short blue bars. As time passed, the yellow bars dominated, signaling that the GMP implementation was almost optimal, as shown by the maximum length of the bars (aspects such as the implementation of CPOB, Documentation and Record Keeping, Process Supervision, Sanitation Facilities, Factory Building, and Factory Location). This means that GMP implementation in these areas was very consistent and in accordance with the standards. By the end of the assessment, there were still a few aspects where the bar lengths were not optimal, as shown by the shorter bars for product recall, labeling, and some other parameters. This indicates that, throughout the assessment, there were GMP evaluation parameters that had not yet been fully achieved, and consistency in these areas needs to be improved to reach the maximum level, like other aspects. Overall, the percentage improvement in the GMP assessment for the Ayam Sambal Ladas MSME was quite significant (Figure 5).

Figure 5. Percentage of GMP Implementation at Ayam Sambal Ladas from September to December 2024



Source: Data Processed by Author (2025)

Based on the graph, it is evident that there was an improvement in the assessment results from 66% to a consistency score of 98% after 3 months. This indicates that over the course of 3 months, the company has effectively met the GMP principles and consistently applied them in accordance with the regulations outlined in Government Regulation No. 75/M-IND/PER/7/2010. The key success factors include management commitment, investor support, and successful identification of non-conformities using the why-why analysis method. A summary of the analysis results can be seen in Table 2, while the detailed why-why analysis is provided in Appendix

Table 2. Root cause and corrective action

No	Date	Area/Scope	Main Finding	Root Cause	Corrective Action	Status
1	14.09.2024	Building	Damaged window frames, cracked floor, peeling walls, cobwebs	Lack of awareness and no written policy	Education & repair	Completed
2	14.09.2024	Facilities	No chemical labels	Personnel assume they know and lack GMP knowledge	Education & labeling	Completed
3	14.09.2024	Machinery & Equipment	Damaged container still in use	No written ban on using damaged equipment	Education & 5S policy	Completed
4	14.09.2024	Production Process	Packaging touches the floor, lights without covers	Misperception of cleanliness & low GMP understanding	Education & purchase of packaging stands	Completed
5	14.09.2024	Laboratory	No laboratory test results evidence	Never requested	Request tests & save results regularly	Completed

6	14.09.2024	Personnel Hygiene	Visible hair, wearing jewelry, guests freely entering	No written rules & low personal hygiene education	Education & hygiene policy	Completed
7	14.09.2024	Product Labeling	Old label only contains name & contact	Old design still in circulation	FIFO & stock card creation	Completed
8	14.09.2024	Cleaning Materials Storage	Mixing cleaning agents with other materials	Low GMP understanding	Education & storage policy	Completed
9	14.09.2024	Sanitation & Pest Control	No pest control mapping	No discussion with service provider	Mapping & evaluation with Rentokil service	Open (2025)
10	14.09.2024	Product Recall	No product recall procedure	No policy	Create SOP & education	Completed
11	14.09.2024	Guest Hygiene	Guests not wearing APD	No written rules	Guest policy & re-education	Completed
12	12.10.2024	Storage	Flies present, door left open	Inadequate pest supervision	Install plastic curtains & pest training	Completed
13	12.10.2024	Sanitation & Ventilation	Warehouse window open, no netting	Lack of risk awareness & no rules	Install netting & pest training	Completed
14	21.11.2024	Pest Control	Ants near production table	Bananas stored directly without base	Use containers & clean properly	Completed
15	21.12.2024	Building Structure	Broken ceramic floor under freezer	Overloading & ceramic not load-bearing	Replace ceramics & limit load	Open (2025)
16	21.12.2024	Personnel Hygiene	Employees wearing beads & pins	Prioritizing aesthetics & inadequate control	Education & warning via WhatsApp group	Completed

DISCUSSION

The factors contributing to the consistency improvement of GMP implementation in MSMEs are due to the suitability of the problem identification method, namely the why-why analysis method. In addition, other factors such as management commitment and investor support also play a role. Hasnan et al. (2022) mentioned that a review of 20 food processing publications from several countries between 2012 and 2022 found that 85% of small food business units faced non-conformities, which included low personal hygiene, inadequate documentation systems, ineffective cleaning programs, lack of operational control, insufficient labeling, and lack of health control. These issues are mainly caused by a lack of supervision, financial constraints, insufficient training, weak enforcement of regulations, and employee resistance to food safety practices.

The first success factor is management commitment, which is reflected in the establishment of a Quality Manual and Standard Operating Procedures (SOP) for GMP

implementation. This Quality Manual includes all regulations regarding the proper GMP implementation procedures, starting from location, building, to customer complaint handling, in accordance with the standards of Government Regulation Ministry of Industry of the Republic of Indonesia No. 75/M-Ind/Per/7/2010. Furthermore, strict supervision by a designated individual, such as the Production Supervisor, and close oversight by the MSME Owner, in this case, Ayam Sambal Ladas, is one of the key successes in implementing GMP, particularly for MSMEs. A strict commitment to food safety by management can foster an organizational culture that supports high performance, discipline, and good compliance with operational standards. This is related to factors such as a comfortable work environment, including temperature, air quality, and lighting, which can enhance employee concentration and productivity (Sundararajan et al., 2020). The next success factor is support from investors and education from external parties, such as PUM Netherlands.

Another factor is the accuracy of the analysis of GMP implementation non-conformities. Accurate analysis of non-conformities ensures product quality and safety, which is an essential factor in business operations. The practice of analyzing these non-conformities uses the root cause analysis method, namely the why-why analysis. In addition to its simplicity, this method has been successfully used by several large industries to analyze problems of non-conformity down to their root causes. Kumar et al. (2020) stated that problem-solving implementation helped reduce production costs and overhead costs by more than 25%, while also increasing production capacity.

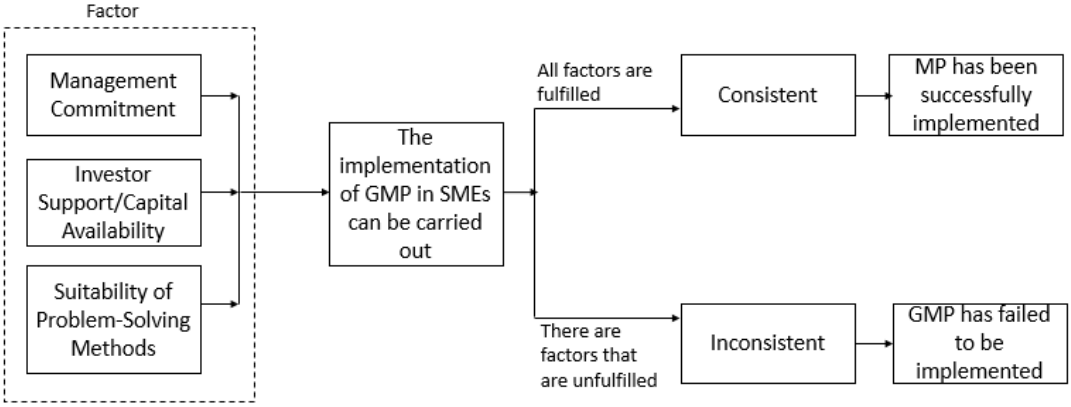
The root cause analysis table (Table 2) using the why-why analysis method shows that one of the most common issues is personnel hygiene. This issue includes employees not wearing head coverings properly, some wearing bracelets during production, using beads as a mask connector, and the lack of specific rules for visitors entering the production area. The analysis points out that the main cause is the lack of awareness about regulations, particularly in terms of personal hygiene. The corrective action for this MSME is education, such as installing clear rules and re-socializing hygiene regulations to all employees, as well as strict supervision to ensure compliance with GMP standards. One example is McDonald's, a large industry that has consistently followed food safety regulations since 1948, building consumer trust by providing a sense of security (Edeh, et al., 2021).

The installation of rules at various points in the Ayam Sambal Ladas MSME is expected to become a culture of food safety implementation to raise awareness and understanding among all personnel involved. Improving this awareness culture is crucial, especially for MSMEs, as changing personnel mindsets is one of the challenges faced by MSMEs. Grover et al. (2016) also mentioned several challenges in implementing food safety regulatory systems, particularly for small food business operators. These challenges include understanding regulations for small industries, implementation costs, implementation timelines, employee readiness, quality culture, and employee availability. This was a discussion between industry representatives and academics in the Midwest region of the United States.

Based on the overall analysis using the root cause analysis method, the factors causing the issues are explained in detail in the table. The actions that need to be taken are a combination of corrective actions that must be implemented immediately and preventive actions that are long-term to prevent recurrence. The table shows that regular evaluations of regulatory compliance, periodic training, and increased supervision are crucial steps in ensuring that food safety standards are maintained. This aligns with the research by Fajarwaty and Jukes (2022), which found that more than 70% of MSMEs in

Indonesia have low knowledge regarding food safety regulatory compliance in the implementation of Good Manufacturing Practice (GMP). In addition, the lack of government supervision over regulatory compliance also contributes to this issue. The main factors are the lack of expertise and competence in food safety, low GMP awareness, and financial support, particularly for food MSMEs in Indonesia. Chung et al. (2020) stated that employee training can enhance skills and knowledge, improving productivity and efficiency in the workplace. As an illustration, refer to the diagram shown in Figure 6. The implementation of GMP in MSMEs is influenced by three factors. Below is the illustration.

Figure 6. Illustration of Success Factors for GMP Implementation



Based on the Figure 6, it is evident that the implementation of GMP has the potential to be applied across all MSMEs. However, it is important to note that this study identifies three key factors that support the successful implementation of GMP: management commitment, investor support or the availability of capital, and the suitability of the problem-solving method. The absence of any one of these factors may lead to inconsistency, which could hinder the effective implementation of GMP.

CONCLUSION

The management intervention process through the implementation of Good Manufacturing Practice (GMP) can be applied to small-scale industries to support the improvement of performance, competitiveness, and business sustainability. Although many challenges are encountered in its implementation in small industries (such as CV Cucurutuku Ceria Ayam Sambal Ladas), factors such as management commitment, external support from organizations like PUM Netherlands, and the use of root cause analysis methods (why-why analysis) can aid its adoption. The formulation of solutions using the root cause analysis method (why-why analysis) to overcome obstacles in GMP implementation in small food industries has proven effective, increasing the assessment score from 66% to 98% within three months, in accordance with Government Regulation No. 75/M-Ind/Per/7/2010.

ACKNOWLEDGMENT

Thank you to all parties for their participation and collaboration in contributing to the writing of this paper. This paper can serve as a reference for policymaking regarding SME management strategies in the implementation of GMP by taking into account several factors outlined in the article, with the hope of enabling food SMEs to become competitive and sustainable.

DECLARATION OF CONFLICTING INTERESTS

The authors have declared no potential conflicts of interest concerning the study, authorship, and/or publication of this article.

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ABOUT THE AUTHOR(S)

1st Author
Rifemi Ihza Nuzulla is a Master's Program student in Applied Food Security at the Politeknik Negeri Lampung, Indonesia.

2nd Author
Irmayani Noer is lecturer of the Master's Program in Applied Food Security at the Politeknik Negeri Lampung, Indonesia. His ORCID ID is https://orcid.org/0000-0002-4509-7999. He can be contacted by email: Irmayani_noer@polinela.ac.id

3rd Author
Suraya Kaffi Syahfura is lecturer of the Master's Program in Applied Food Security at the Politeknik Negeri Lampung, Indonesia.

4th Author
Beni Hidayat is lecturer of the Master's Program in Applied Food Security at the Politeknik Negeri Lampung, Indonesia.