

LEVEL OF KNOWLEDGE, ATTITUDE, AND PRACTICE OF GOOD MANUFACTURING PRACTICES (GMP) IN CHICKEN SLAUGHTERHOUSES AND CHICKEN CUTTING PLACES IN DENPASAR

Tingkat Pengetahuan, Sikap dan Praktik *Good Manufacturing Practice* (GMP) pada Rumah Potong Ayam dan Tempat Pemotongan Ayam di Denpasar

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Abstract

Chicken meat is the most widely consumed animal-based food commodity in Indonesia, making product quality and safety important. Chicken Slaughterhouses and Chicken Cutting Places serve as critical units in producing chicken carcasses that meet the principles of Safe, Healthy, Intact, and Halal (ASUH). This study aimed to determine the level of knowledge, attitudes, and practices regarding the implementation of Good Manufacturing Practice (GMP) in Chicken Slaughterhouses and Chicken Cutting Places in Denpasar City. This study used an observational design and a quantitative approach. Sampling was conducted using purposive and snowball sampling techniques. Fourteen respondents, including owners and quality control managers, were interviewed for this study. Data were collected through structured interviews using questionnaires. The level of GMP knowledge showed that 42.8% of respondents were in the good category, while the overall level of knowledge was low. The GMP attitude level showed that 85.7% of respondents had a positive attitude toward GMP implementation. Meanwhile, the GMP practice level indicated that 50% of the respondents were in the low category. GMP knowledge in Chicken Slaughterhouses and Chicken Cutting Places showed variation but tended to remain low. Although respondents' attitudes toward GMP were generally positive, this was not yet reflected in their practices, which remained suboptimal and below the standard. This condition indicates a gap between knowledge and attitude and the actual implementation of GMP in the field. The recommendations of this study include

continuous socialization and further research with more diverse respondents to improve knowledge, attitudes, and GMP practices among food handlers.

Keywords: Behavior, Chicken Processing, GMP, Implementation, Understanding

Abstrak

Daging ayam merupakan komoditas pangan hewani yang paling banyak dikonsumsi masyarakat Indonesia sehingga kualitas dan keamanan produk menjadi aspek yang sangat penting. Rumah Potong Ayam (RPA) dan Tempat Pemotongan Ayam (TPA) berperan sebagai unit kritis dalam menghasilkan karkas ayam yang memenuhi prinsip Aman, Sehat, Utuh, dan Halal (ASUH). Penelitian ini bertujuan untuk mengetahui tingkat pengetahuan, sikap, dan praktik terkait penerapan Good Manufacturing Practice (GMP) pada RPA dan TPA di Kota Denpasar. Penelitian menggunakan desain observasional dengan pendekatan kuantitatif. Pengambilan sampel dilakukan secara *purposive* dan *snowball sampling*. Responden berjumlah 14 yang terdiri atas pemilik atau manajer *quality control*. Pengumpulan data dilakukan melalui wawancara dengan angket terstruktur. Tingkat pengetahuan GMP menunjukkan bahwa 42,8% responden berada pada kategori baik, tingkat pengetahuan secara keseluruhan masih tergolong rendah. Tingkat sikap GMP menunjukkan bahwa 85,7% responden memiliki sikap yang positif terhadap penerapan GMP. Sementara itu, tingkat praktik GMP menunjukkan bahwa 50% responden masih berada pada kategori kurang. Tingkat pengetahuan GMP pada RPA dan TPA menunjukkan variasi namun cenderung masih rendah. Meskipun sikap responden terhadap GMP tergolong positif, hal tersebut belum tercermin dalam praktik, yang masih kurang optimal dan belum memenuhi standar. Kondisi ini menunjukkan adanya kesenjangan antara pengetahuan dan sikap dengan pelaksanaan GMP di lapangan. Saran untuk penelitian ini perlu sosialisasi berkelanjutan dan penelitian lanjutan dengan responden beragam untuk meningkatkan pengetahuan, sikap, dan praktik GMP.

Kata kunci: GMP, Pemahaman, Pemotongan Ayam, Perilaku, Penerapan

INTRODUCTION

Chicken meat is one of the most widely consumed animal-based foods in Indonesia because of its delicious taste, high nutritional content, and affordable price. In addition, chicken meat is acceptable to all groups and religions, making it the main source of animal protein in the community (Fauzi & Wijaya, 2021). According to the Badan Pusat Statistik (2022), poultry meat production in Denpasar ranks first, with a total production of 8,268 tons. This high demand requires the poultry industry to consistently provide quality chicken carcasses through poultry slaughtering units (Sabil & Sari, 2021; Nurjanah *et al.*, 2021). In this case, Chicken Slaughterhouses (RPA) and Chicken Slaughtering Facilities (TPA) play an important role because all critical processes that determine the quality, hygiene, and safety of carcasses take place in these facilities; therefore, the products produced must meet the principles of Safe, Healthy, Intact, and Halal (ASUH) (Kholis *et al.*, 2022).

Cutting processes that do not meet hygiene and sanitation standards can reduce quality and pose a risk of pathogenic microbial contamination, which is harmful to public health. This condition is in line with the food quality and safety issues identified by Fardiaz (1996) in Suryanto *et al.* (2016), who explained that there are four main issues that remain challenges in Indonesia. First, many food products do not meet quality and safety standards. Second, food poisoning cases continue to occur frequently. Third, the low level of knowledge, skills, and responsibility of producers means that production and distribution processes do not fully comply with Good Manufacturing Practices (GMP), especially in small industries and households. Fourth, low consumer awareness of food quality and safety, which is influenced

by limited knowledge and purchasing power, indicates that low-quality food products are still widely chosen.

To address these issues, the government requires every animal-based food business unit to have a Veterinary Control Number (NKV) as proof of product safety and suitability, as stipulated in Minister of Agriculture Regulation No. 11 of 2020. As one of the main requirements for fulfilling the NKV, every RPA must implement Good Manufacturing Practices (GMP) or Good Food Production Practices (CPPB) (Lestariningsih *et al.*, 2020). Good Manufacturing Practices (GMP) is a management concept that contains systematic procedures and work mechanisms to ensure that the production process runs correctly, thereby producing products that meet standards with minimal errors or nonconformities (Suhartini, 2018). The implementation of GMP is an important foundation for ensuring the quality and safety of chicken carcasses and serves as a prerequisite before the implementation of advanced food safety systems, such as Sanitation Standard Operating Procedures (SSOP) and Hazard Analysis and Critical Control Point (HACCP) (Keener, 2015).

The implementation of GMP principles is influenced by the level of individual understanding and perception of the concept (Hendro *et al.*, 2023). The lack of knowledge and understanding of GMP principles by business actors can be an obstacle to its implementation in the field. Research on knowledge, attitudes, and practices (KAP) is commonly applied in public health studies and is a widely used method for obtaining information on public health program planning in developing countries (Salimi, 2016). This approach is relevant to Denpasar because there are active RPA and TPA in this region, which are important parts of the poultry distribution chain in Bali. The existence of these units allows for a direct assessment of the knowledge, attitudes, and practices of business actors. This study aimed to determine the level of knowledge, attitudes, and practices of GMP in RPA and TPA in Denpasar.

RESEARCH METHODS

Study Object

The object of this study is 14 RPA and TPA units in the Denpasar City area, consisting of four RPA and 10 TPA units. There were 14 respondents in this study, each of whom was the owner or quality control manager of the RPA and TPA units. The study was conducted between October and November 2026.

Study Design

This study was observational and used a quantitative approach. The study locations were selected using a non-probability sampling method, namely purposive sampling supported by snowball sampling techniques. Data were collected through interviews using structured questionnaires.

Study Variables

This study has three main variables, namely business actors or quality control managers, as independent variables. The levels of knowledge, attitude, and practice were the dependent variables. The sampling locations at RPA and TPA in Denpasar were set as control variables.

Data Collection Methods

Data were collected using primary and secondary data. The collected data consisted of the level of knowledge, attitudes, and practices regarding GMP. Primary data collection was carried out through direct interviews with respondents based on questionnaires and confirmed with field conditions. Secondary data were obtained from relevant agencies, such as the Halal Inspection

Agency (LPH) LPPOM, which included information on the list of chicken slaughtering units, certification status, and other supporting documents relevant to the research focus.

Data analysis

Data on the level of knowledge, attitudes, and practices of GMP were collected using a questionnaire that combined the Guttman scale for knowledge and practices and a 1–4 Likert scale for attitudes. On the Guttman scale, answers were scored 1 for “Yes” and 0 for “No.” For attitudes, a Likert scale with a score range of 1–4 was used: strongly disagree, disagree, agree, and strongly agree. The score assessment was calculated using the formula $\text{index \%} = \frac{\text{total score obtained}}{\text{maximum score}} \times 100$. Subsequently, the resulting index value was interpreted based on the assessment criteria in Table 1. The data were analyzed using quantitative descriptive methods.

RESULTS AND DISCUSSION

Results

Based on Table 2, the results show that 21.4% were in the very good category, 21.4% in the good category, 21.4% in the fair category, 21.4% in the poor category, and 14.3% in the very poor category. Overall, these results show that the respondents' knowledge levels varied but were still relatively low. Based on Table 3, the results show that most respondents, namely 57.1%, were in the good category, 28.6% in the very good category, and 14.3% in the fair category. These results indicate that the respondents had a positive attitude towards GMP. Based on Table 4, the results show that most respondents, namely 43.9%, are in the poor category, 21.4% in the very good category, 14.3% in the good category, 2 respondents, 14.3% in the fair category, and 7.1% in the very poor category. These results indicate that GMP practices were poor.

Discussion

Level of GMP Knowledge

The level of GMP knowledge among RPA and TPA in Denpasar shows that respondents' understanding and ability to apply the assessed aspects varied and were relatively low. This may be influenced by various factors, one of which is related to the educational background and work experience of business operators or quality control managers, as individuals with higher education or longer experience generally have a better understanding of operational standards and food safety principles (Baluka *et al.*, 2014). Education serves as the basis for understanding the concepts of food hazards, hygiene, and regulations; therefore, more educated business actors tend to be more receptive to and apply food safety principles (Sihombing *et al.*, 2018). These findings are also in line with the results of a study by Matchawe *et al.* (2019), which showed that the level of GMP knowledge in chicken slaughtering tends to be low, so that this limited knowledge can be one of the causes of inconsistency in the practice of GMP principles.

This is also in accordance with a study conducted by Ardianto *et al.* (2023), who stated that there is a significant relationship between knowledge and food safety practices. The implementation of GMP is crucial because the good food safety attitudes and practices of food handlers must be balanced with adequate educational support. Knowledge of GMP can be improved through structured counseling and training so that business actors can implement food safety practices in accordance with established standards. Through training, food handlers gain a more accurate understanding of the correct procedures so that food safety implementation can be consistent and in accordance with the regulations (Yahya, 2020). Regular food safety training also contributes to improving the ability to manage safe production processes, prevent

contamination, and ensure the correct implementation of GMP and SSOP. Respondents' level of knowledge about GMP is still not optimal; therefore, a targeted and sustainable GMP training program is needed to improve understanding of food safety principles.

Level of Attitude Towards GMP

The attitude towards GMP showed a positive trend towards GMP principles and food safety in RPA and TPA. The findings indicate that most respondents agree with food safety principles and understand the importance of implementing GMP, but have not fully mastered the basic concepts and underlying theories of GMP. This indicates that a positive attitude towards GMP has been formed but has not been followed by a sufficiently strong level of knowledge. These findings also confirm that respondents' acceptance of GMP tends to be normative; the importance of food safety is understood as part of the work procedures that must be carried out, but this understanding has not been accompanied by sufficient conceptual depth to support the proper and consistent implementation of GMP.

This is also in accordance with the results of a study by Matchawe *et al.* (2019), who reported that food handlers in chicken slaughterhouses tend to have a positive attitude towards food safety, but their level of knowledge is still low; therefore, the implementation of hygienic practices is not always optimal. These results are also in line with the research conducted by Palupi *et al.* (2021), which confirms that a positive attitude among food handlers must be accompanied by adequate knowledge and consistent hygienic practices, as a positive attitude alone does not always correlate with actual behavior in food handling. This situation illustrates that further training or education is urgently needed, particularly to strengthen theoretical understanding, so that these positive attitudes can be translated into more consistent and standard-compliant practices.

Level of GMP Practice

The level of GMP practice indicates that it is not yet adequate for RPA and TPA. The level of GMP practice in RPA and TPA can be influenced by several factors, as most of the RPA and TPA studied are located in densely populated areas, and many of them still operate in a location that is integrated with the owner's residence. This can increase the risk of physical, chemical, and biological contamination due to exposure to dust, household smoke, and domestic waste mixed with the slaughter waste. This is also in line with the results of a study conducted by Afrila *et al.* (2023), who stated that 91% of the location and environmental aspects of chicken slaughterhouses did not meet the requirements. The presence of RPA and TPA close to residential areas can negatively impact the health of the community (Radillah *et al.*, 2017).

The separation of dirty and clean areas also remains one of the main weaknesses affecting the low overall GMP scores of RPA and TPA. Although some RPA have begun to implement more structured zoning, most TPA still do not have a clear separation between the live chicken reception area (dirty), slaughtering, carcass washing (transition), and packaging or storage (clean). In many TPAs, feather removal and evisceration are still carried out in the same room as packaging activities, thereby increasing the risk of cross-contamination between feces, feathers, and clean carcasses. This condition affects the quality of the chicken produced because the slaughtering, cleaning, and packaging stages are often carried out in the same room, making them more susceptible to exposure to various sources of contaminants (Radillah *et al.*, 2017). In addition, personal hygiene and facility sanitation remain poor. Many workers do not use personal protective equipment, such as aprons, gloves, or masks, increasing the possibility of contaminant transfer from workers' bodies to products (Afrila *et al.*, 2023). Handwashing facilities are either unavailable or underutilized, making it difficult to consistently implement basic hygiene practices. This is also similar to research conducted by Indraini (2024), who

explained that the implementation of hygiene by chicken cutters still does not meet applicable requirements, with only a small number of workers washing their hands before starting work, and only a few doing so correctly using running water and soap. Although some places clean the cutting machines after use, these sanitation activities are not supported by clear and scheduled procedures. Waste and building sanitation are also in an alarming condition. Open drainage channels without grates cause blood, wastewater, and organ remains to pool on the floor, creating an environment that supports the growth of bacteria, such as *Salmonella* spp. and *Escherichia coli*. The building sanitation program is not yet running optimally because of the lack of a routine cleaning schedule using food-grade disinfectants and weak vector control.

Health checks on chickens at RPA and TPA facilities have not yet been conducted uniformly, meaning that carcass conditions are not always properly monitored. Visual inspection of chickens is very important, including ante-mortem inspection to ensure that chickens are fit for slaughter and post-mortem inspection as part of the quality control. Quality inspection is an important component to ensure that the products (carcasses) produced are safe and fit for consumption, with more consistent quality and minimal defects, thereby affecting consumer satisfaction levels. In quality management, carcass quality control is an important part of ensuring that every production process follows the established standards (Sabela *et al.*, 2024). In addition, some RPA and TPA have begun to implement cold storage of final products or follow the cold chain principle. However, its implementation is not yet uniform throughout the production chain; therefore, the quality of chicken meat can still decline during the handling and distribution processes. In the overall chicken meat distribution system in RPA and TPA, the use of transportation equipment varies. Some places already use cars with closed cool boxes to better maintain the temperature of the meat, while others use open pick-up trucks and motorcycles to transport meat to markets or customers. However, these types of transportation do not comply with Indonesian National Standard (SNI), 1999, which requires the use of closed boxes made of non-toxic, corrosion-resistant, and easy-to-clean materials, equipped with cooling devices capable of maintaining the temperature of fresh meat at +7°C and offal at +3°C (Suryanto *et al.*, 2016). Given these conditions, comprehensive improvements in GMP aspects are needed to ensure that the production process runs smoothly. Owners or managers also need to improve human resource capabilities and ensure that every procedure is carried out according to the standards to produce safe and consumable products.

CONCLUSION AND SUGGESTIONS

Conclusion

The level of GMP knowledge among RPA and TPA showed variation, but most was still relatively low. Respondents' attitudes toward GMP were positive, but this was not consistently reflected in practice, where most GMP implementation was still suboptimal and did not meet the required standard. This condition indicates a gap between good knowledge and attitudes and actual actions in the field; therefore, GMP practices still need to be strengthened.

Suggestions

Based on the results of this study, it is necessary to conduct continuous socialization and education regarding GMP by relevant parties (the government) to improve knowledge, attitudes, and practices among processed animal food producers (RPA and TPA). RPA and TPA managers are also expected to strengthen aspects of knowledge, attitudes, and practices that are still not up to standard so that GMP implementation can run optimally. In addition, further research with a more diverse number and characteristics of respondents is recommended to examine the risk factors related to GMP implementation in greater depth.

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Tables

Table 1. Assessment Criteria

| Score (%) | Criteria |
|-----------|-----------|
| 81-100 | Very Good |
| 61-80 | Good |
| 41-60 | Fair |
| 21-40 | Poor |
| 0-20 | Very Poor |

Table 2. Level of GMP Knowledge at RPA and TPA

| Category | RPA and TPA (n=14) | Percentage (%) |
|-----------|--------------------|----------------|
| Very Good | 3 | 21.4 |
| Good | 3 | 21.4 |
| Fair | 3 | 21.4 |
| Poor | 3 | 21.4 |
| Very Poor | 2 | 14.3 |

Table 3. Level of GMP Attitudes at RPA and TPA

| Category | RPA and TPA (n=14) | Percentage (%) |
|-----------|--------------------|----------------|
| Very Good | 4 | 28.6 |
| Good | 8 | 57.1 |
| Fair | 2 | 14.3 |
| Poor | 0 | 0 |
| Very Poor | 0 | 0 |

Table 4. Level of GMP Practices at RPA and TPA

| Category | RPA and TPA (n=14) | Percentage (%) |
|-----------|--------------------|----------------|
| Very Good | 3 | 21.4% |
| Good | 2 | 14.3% |
| Fair | 2 | 14.3% |
| Poor | 6 | 43.9% |
| Very Poor | 1 | 7.1% |