

CHAPTER I

INTRODUCTION

This chapter consists of the background of the problem, formulation of the problem, objectives of the research, scopes of the problem, and outline of the report.

1.1 Background

Food is a basic requirement of human life and good food must meet the requirements, being healthy, clean, having sufficient nutritional content, hygienic processes, and not being polluted (Ponda et al, 2020). Rianti *et al* (2018) also stated that contamination of food can cause dangerous diseases and even death. According to the Ministry of Industry Indonesia, the food and beverage industry is the dominant business sub-sector in Indonesia, as seen from the increased investment in the food business, high employment to reduce unemployment in Indonesia, and the achievement of export value. The role of this industry is very large for Indonesian economy, both from large factory and SME (small and mid-size enterprise). Not only that, but the Ministry of Industry also said that the food industry in Indonesia is more dominated by SMEs. For this reason, the food that is produced must be good food and fit for consumption.

Quoted from beritajatim.com, *Badan Pengawas Obat dan Makanan* (BPOM) revealed that there are around 20 million cases of food poisoning every year in Indonesia. According to the *Badan Pengawas Obat dan Makanan* (BPOM), it was reported that the five groups that caused the most poisoning in 2019 were animal (47.35%), beverage (13.20%), medicine (9.93%), food (7.64%), and chemical (7.01%). The graph of the data on the causes of poisoning in Indonesia during 2019 can be seen in **Figure 1.1**. Pudjirahaju (2017) said that the cause of food poisoning is dominated by preservative material which is relatively easy to circulate. And when there is a problem, the parties involved are producer, consumer,

and the government. Therefore, in order to achieve good food, food safety is needed by establishing the right standardization.

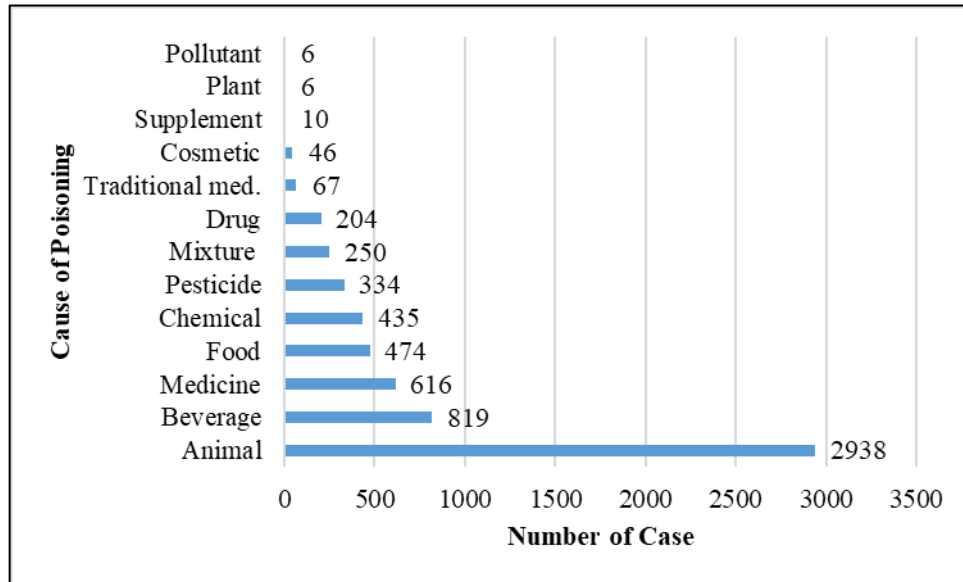


Figure 1.1 Report of National Poisoning Case by Group of Causes in 2019 (Source: BPOM)

In *Peta Ketahanan dan Kerentanan Pangan Indonesia (2009)* by Dewan Ketahanan Pangan (DKP), food security is defined as: "Food security occurs when all people continuously, physically, socially and economically, have access to adequate/sufficient, nutritious and safe food that meets their needs. their diet and food choices to live an active and healthy life". There are 3 pillars of food security, namely food availability, access to food, and food utilization (Dewan Ketahanan Pangan, 2009). Besides that, food security is also part of the development of the food supply chain. However, the instability of the three pillars of food security is very pronounced due to very limited movements due to the presence of covid-19 in the world during 2020. The Covid-19 pandemic represents a difficult and unprecedented challenge, one of which is for the authorities responsible for the food safety surveillance system in the world. Routine activity is very limited. As a result, monitoring and reporting of food safety is delayed and the food industry needs to implement health protocols across sectors or departments. On the one hand, the food industry needs to improve quality control of food to ensure that their products are not contaminated by the spread of Covid-19. This needs to be applied to small

and mid-size enterprises (SMEs). Small and mid-size enterprises (SMEs) in the food sector really need to pay attention to food safety, especially during the current pandemic. However, due to limited human resources who are experts in carrying out food control during production, SMEs need to apply food safety method that is easy to apply and capable of providing food security to consumers.

Food safety refers to the proper handling of a food from raw materials to final product to prevent contamination that has the potential to cause a disease in food. It is important to ensure that a food has food safety guarantees, especially in current time where many technological conveniences make it easier for producers to distribute products globally. The World Health Organization (WHO) emphasizes to the world the challenges and opportunities of food security. Therefore, when a problem occurs due to the low food safety of an area, then the problem can become an international problem. Ponda *et al* (2020) states that consumer awareness of product quality problems, one of which is food safety, is increasing. As a result, there is intense competition as well as challenges in the food industry to produce their products of high quality, safely, and at the right price level. Not only that, the existence of food safety as a guarantee of a product is able to build and improve the image of food product. Thus, the government as a regulator needs to establish a recognized food safety standard, and one of the internationally recognized food safety standards is the Hazard Analysis Critical Control Point (HACCP) (Erlinda et al, 2018).

HACCP is a program of inspection, control, and regulatory procedures designed to keep food from being contaminated chemically, physically, or biologically before serving (Arisman, 2009). The concept of HACCP introduced by The Pillsbury Company, along with US Army Nautics Research and Development Laboratories, The National Aeronautics and Space Administration (NASA), serta US Air Force Space Laboratory Project Group in 1959 (Ponda et al, 2020). The philosophy of the HACCP system is guidance and control of food quality and food safety based on preventive measures which are believed to be superior to conventional method which emphasize too much sampling and testing of final

products in the laboratory (Pudjirahaju, 2017). The principles of HACCP are detailed in the Codex Alimentarius guidelines and integrated with the ISO 22000: 2018 (ISO, 2018). It is important for the food industry to implement HACCP in their production processes. This is because HACCP is a scientific approach to assessing hazard associated with food production or the production chain from a biological, chemical and/or physical perspective that affects the safety of food product (Food Product Association, 2006). Hazard Analysis Critical Control Point (HACCP) is a control system in an effort to prevent problems that is based on the identification of critical points in the handling and production process stages (Pudjirahaju, 2017). Identification of critical point is one of the 12 steps of implementing the HACCP approach in accordance with the first principle of Codex HACCP and ISO 22000: 2018 (Chen et al, 2019).

According to Bryan (1990), the HACCP system is defined as a management system that uses a logical (rational), systematic, continuous, and comprehensive approach to identify, monitor, and control hazards (high risk) to the quality and safety of food products in the food processing sector. Because its approach is based on historical data about sickness and spoilage, the HACCP idea is referred to as rational. The HACCP idea is systematic because it is a comprehensive plan that comprises step-by-step operations, processes, and control criteria. The HACCP principle is also continuous because if an issue is discovered, immediate action can be taken to correct it. Furthermore, because the HACCP system is closely tied to ingredients, processing or processes, and the goal of further use of food products, it is said to be complete.

The implementation of HACCP is used by most small and medium food company in the European Union (EU). HACCP is a worldwide guideline for controlling foodborne safety threats, according to the international food safety community (Panghal et al, 2018 cited in Muresan et al, 2020). In Indonesia, HACCP was first introduced in 1998 by the *Badan Standarisasi Nasional (BSN)*, SNI 01-4852-1998 regarding "Hazard Analysis Critical Control Point (HACCP) Systems and Guidelines for Its Application" (Ponda et al, 2020). According to Susanto *et al*

(2017), the application of HACCP standards has benefits for SMEs, because they are more competitive, able to guarantee that products are processed hygienically, and are safe for consumption and improve their image. As a result, implementing the HACCP system will reduce the possibility of customer complaints due to food-borne risks, and HACCP can be an effective food-safety precaution for SMEs.

The basic pre-required program for ensuring food safety is closely linked to the execution of the HACCP system (Agustin, 2020). The Good Manufacturing Procedure (GMP) and Sanitation Standard Operating Procedure (SSOP) are the two essential pre-required programs (Agustin, 2020). GMP is a set of guidelines for producing food with the objective of ensuring that producers can meet predetermined requirements in order to produce high-quality food products that meet consumer demands (Amin, 2018). Production requirements, site requirements, buildings and facilities, production equipment, and employees are all included in this guideline (Dewanti and Hariyadi, 2013). The implementation of GMP was set by BPOM in 2012 on *Cara Produksi Pangan yang Baik (CPPB) untuk Industri Rumah Tangga*. The Standard Sanitation Operating Procedure (SSOP) is a standard procedure for carrying out management principles through sanitation and hygiene operations (Ristyanti, 2021). A sanitation program, also known as an SSOP, is made mandatory in order for an industry to improve the quality of its products and assure the safety of its food production system (Triharjono et al, 2013). The company, particularly SME, can use HACCP to assure food safety once the fundamental pre-required program for food manufacturing has been completed.

Toteles Food & Bake House is a Small and Medium Enterprise (SME) in the food sector located in Batam City, Riau Islands, as can be seen in **Figure 1.2**. Toteles Food & Bake House sells various kinds of cakes, including traditional cakes, cakes, and others. One of the products observed in this study is Pineapple Roll, or also known as Legit Roll, as shown in **Figure 1.3**. According to the owner of Toteles Food & Bake House, the Pineapple Roll is a rolled sponge cake covered with pineapple jam. This product is also a signature product that has been introduced since the founding of the company.



Figure 1.2 Building of Toteles Food and Bake House



Figure 1.3 Pineapple Roll (Legit Roll)
(Source: Toteles Food and Bake House)

The determination of Pineapple Roll as the object of this research is based on interviews conducted by researchers with the owner of Toteles Food & Bake House. According to the owner, apart from this product, there are also the top 5 or

best products, namely Layer Cake, Butter Cake, Caramel Cake (*Kue Sarang Semut*), *Ketan Talam Durian*, and Premium Chiffon Pandan. The company has been dominated by consumers from the surrounding community and Singaporean tourists visiting Batam. The company's observations show that consumers have different preferences for the taste of the products mentioned earlier and the company concludes that 2 of the 5 products dominate sales or are the most popular, namely Layer Cake and Pineapple Roll. According to the company, Layer Cake is a product with a limited number of productions because it takes a long time to make and is usually ordered for special events or days, and specially produced for tourists from Singapore. However, Layer Cake products themselves have quite competitive and well-known competitors in Batam City, such as from Tora-Tora, Royal Bakery, La Moist, The Fora, and BLC (Batam Layer Cakes) companies. Competition is also said to be tight despite the pandemic because most product sales also rely on the delivery process. Based on the interview, the researcher and the owner determined the Pineapple Roll (Legit Roll) product as the superior product that was used as the object of research and wanted to strengthen the market for this product. To support this, the design of food safety on this product is the first step to improve product quality and as a form of certification readiness where the value of the certificate that can be affixed to the product packaging can be an added value of the business strategy. Based on this background, the research for this final project is a research on Pineapple Roll products carried out using the Hazard Analysis Critical Control Point (HACCP) method.

1.2 Problem Statement

Based on the background, the problem statement to be discussed of this research is how to design food safety of Pineapple Roll product for Toteles Food & Bake House using Hazard Analysis Critical Control Point (HACCP) plan.

1.3 The Aim of Research

Based on the background, the objective of this final project is to design food safety of Pineapple Roll product for Toteles Food & Bake House using Hazard Analysis Critical Control Point (HACCP) plan.

1.4 Research Scopes

The scope of this research is:

1. The object of research is Pineapple Roll.
2. The design of the HACCP plan in this study is only a recommendation and does not include certification.

1.5 Outline of Report

The outline of this final project report is systematic as follows:

CHAPTER I INTRODUCTION

This chapter contains the background, problem statement, the aim of research, research scopes, and outline of this proposal.

CHAPTER II LITERATURE REVIEW

This chapter contains some theory or literature that related to the completion of the final project.

CHAPTER III RESEARCH METHODOLOGY

This chapter consists of a preliminary study, identification of problem, the selected method of research, explain the stages of data collection and processing, and flowchart of research methodology until the objectives of this final research can be obtained.

CHAPTER IV DATA COLLECTION AND PROCESSING

This chapter consists of collected data and processing data. Data collection consists of primary data and secondary data. Data processing consists of identification of the implementation of GMP,

identification of the implementation of SSOP, identification of the preparation of HACCP, and design of HACCP plan.

CHAPTER V ANALYSIS

This chapter contains the analysis of the identification of food safety plans at Toteles Food and Bake House. This analysis is based on the results of the identification of the implementation of Good Manufacturing Practice (GMP) and Sanitation Standard Operating Procedure (SSOP), and the identification of the HACCP plan for Pineapple Roll products.

CHAPTER VI CONCLUSION

This chapter contains conclusions from the research conducted and suggestions for future research.

