CHAPTER I
INTRODUCTION

Chapter I consists of the background problems, problem formulation, research objectives, research scope, and outline of the report.

1.1 Background

Catfish and pangasius (shark catfish) are among the nutritious food ingredients that are easy to serve as a side dish. The nutritional content of catfish and pangasius are comparable to other fish meat. The nutritional value of catfish and pangasius increases when processed properly. The nutritional content of catfish and pangasius according to the results of the analysis of the composition of food ingredients per 100 g are presented in **Table 1.1** and **Table 1.2**.

Table 1.1 Nutritional Composition of 100 g Fresh Catfish

Chemical Composition	Nutritional Value
Energy	92 kcal
Fat	2.82 g
Vitamin A	70 mcg
Carbohydrates	0 g
Protein	16.20 g
Fiber	0 g
Calsium	14 mg
Natrium	42 mg
Iron	0.25 mg

Source: nilaigizi.com

Table 1.2 Nutritional Composition of 100 g Fresh Pangasius

Chemical Composition	Nutritional Value
Energy	132 kcal
Fat	6.60 g
Vitamin B3	1.70 mg
Carbohydrates	1.10 g
Protein	17 g
Water	74.40 g
Calsium	31 mg
Natrium	77 mg
Iron	1.60 mg

Source: nilaigizi.com

In Indonesia, currently, the cultivation of catfish and pangasius are getting very high. Marine and Fisheries Ministry data (2019) shows how catfish commodity products in 2012 were 441,217 tons has increased up to 1,265,201, and it increased more in 2017 with an average increase of 20.74% from 2012 until 2017. Based on data from the Indonesian Catfish Entrepreneurs Association (*Asosiasi Pengusaha Catfish Indonesia*/APCI), pangasius production in 2017 was recorded at 319,967 tons, then in 2018 it increased again to 391,151 tons. Therefore, these datas shows that catfish and pangasius commodities have a very high potential for developing various derivative products. Marsigit (2010) mention that diversification is one of the strategic steps in supporting food security in which it helps overcoming cases of malnutrition and community economic creation.

Smoked fish is one of the diversified products of fish. Smoked fish is a processed fishery product whose primary raw material is fish and goes through a processing process using a smoking system. Smoking is one of the preservation techniques carried out for a long time to help maintain the excellent quality of the product itself. It benefits for preserving fish and gives a pleasant aroma to be more delicious. Thus, it needs the technique to help better it up.

One of the places that produce smoked fish in Padang City is the Sipujuk Farm Fish Processing Unit. The Sipujuk Farm Fish Processing Unit was established in 2017. This independent business main purpose was established for processing pangasius and catfish into smoked pangasius and smoked catfish from self-cultivation.

The Sipujuk Farm Fish Processing Unit is located at Bakti ABRI Sikuliek Streets, R.O02/RW.005, Koto Panjang, Ikua Koto Village, Koto Tangah District, Padang City. The location of Sipujuk Farm can be seen in **Figure 1.1**. The Sipujuk Farm Fish Processing Unit has a land area of 1.04 Ha with a planned development of 4 Ha, and has complete facilities, so that production can be carried out on-site independently. Some of the facilities available as aquaculture containers are rearing ponds with a size of ±2x3x1.5 m^3 as many as 61 ponds that can meet the needs of

this smoked fish product. Not only cultivating pangasius, but also catfish in a small portion of the pond, which are 3 ponds. Not only that, there are 3 ponds that are used as quarantine ponds for sick fishes. However, the effective number of ponds currently used are 27 ponds, of which 5 are for seed and 22 for rearing. The other ponds were used to plant water hyacinth (Eichhornia crassipes) as many as 7 ponds, 6 ponds were left empty, and 2 other ponds were used to store fish that had been sorted before being dissected into smoked fish. The other 13 small ponds with a size of ±1x1x1 m^3 are used to maintain catfish seeds.

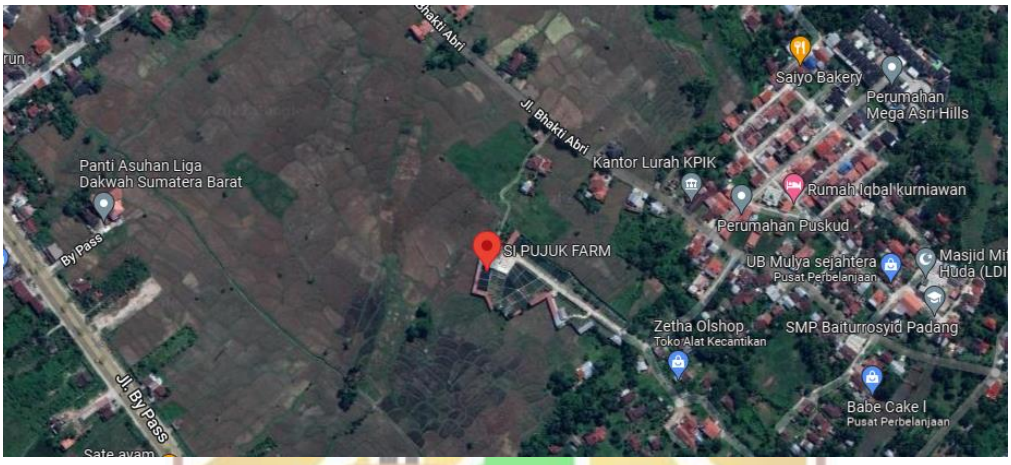

Figure 1. 1 Location of the Sipujuk Farm Fish Processing Unit (Source: Google Maps)

The Sipujuk Farm Fish Processing Unit produces smoked pangasius and smoked catfish with a current production capacity of 200-250 kg of raw materials per day. Sipujuk Farm is still unable to produce catfish seeds and pangasius seeds themselves. Therefore, the owner of this independent business bought pangasius seeds from Yogyakarta, which were sent via air transportation for approximately 5 hours of travel. Meanwhile, catfish seeds were purchased from the Fisheries College in Pariaman Regency, West Sumatra.

Even during the Covid-19 pandemic, the Sipujuk Farm Fish Processing Unit was not affected by it, but instead experienced an increase in demand. This is evident from the latest results of the smoked fish business, which has developed quite rapidly and can reach 4-6 tons of raw fish to be processed or even more, while

usually it was only 2 tons of fish. Now is the right time to carry out market development and expansion. The market expansion target is to double the production process from processing 250 kg of raw materials per day to 500 kg per day.

The Sipujuk Farm Fish Processing Unit business focuses on processing ready-to-cook smoked fish rather than selling raw or fresh fish. For the Sipujuk Farm Fish Processing Unit, it is needed that the cultivation activities to the results of smoked fish to be considered technically. The results of this smoked catfish are sold in 3 (three) size variants, namely 100 g, 200 g, and 250 g. The products then distributed to shops, supermarkets and souvenir centers. As a unit that produce and market catfish derivative products, the Sipujuk Farm Fish Processing Unit certainly has to ensure that the products they produce have good quality and safe. Good quality and safety products are free from bacteria and not contaminated from raw materials until finished products.

Good Manufacturing Practices (GMP) is an essential requirement that should be met by a company that wants to consistently produce quality and safe food (Bimantara & Triastuti, 2018). Good Manufacturing Practices (GMP) requirements include requirements for production, location, buildings and facilities, production equipment, and employees (WHO, 2015). The virtue of implementing GMP is to prevent contamination of the product during the production process. The product that reaches the consumer is a product that is safe for consumption. The broad application of GMP will have implications for many aspects related to the hygiene of company employees and the sanitation of the production process (Agustin, 2020).

GMP is implemented during the initial production process (receiving raw materials) to the storage of finished products (Latief & Trimo, 2019). Based on the website Drs. J. Tanzil and Associates, all industries related to food, medicine, cosmetics, and animal feed are required to implement GMP since the factory was established, and the first process was carried out. In general, the application of GMP

can refer to various references because so far there is no set international standard like the ISO standard. In Indonesia, GMP standards are issued by the Indonesian National Agency of Drug and Food Control (BPOM RI/*Badan Pengawas Obat dan Makanan Republik Indonesia*) according to the type of product produced (Al Hasan et al., 2019). In the food industry, guidelines for Good Manufacturing Practices for Food Production (GMP-FP) are stipulated through the regulation of the Minister of Industry of the Republic of Indonesia number 75/M-IND/PER/7/2010. In the rest of this report, these guidelines are called GMP-FP.

Other pre-requisite programs that must be applied to companies to maintain product safety are Sanitation Standard Operating Procedures (SSOP). According to Corlet (1998) in (Efendi, 2007), Sanitation Standard Operating Procedures is a written procedure that food processors must use to meet sanitation conditions and food factories' practices. A good sanitation program will control many biological, chemical, and physical hazards in a food operation.

In addition, the application of GMP and SSOP is one of the requirements in product certification required by the BPOM RI, so that businessmen can obtain product distribution permits (BPOM RI, 2017). These requirements are contained in BPOM regulation number 27 of 2017 concerning Processed Food Registration. As of right now, the Sipujuk Farm Fish Processing Unit only have PIRT (*Pangan Industri Rumah Tangga*/Home Industry Food) permit certificate issued by the regent/mayor. The Sipujuk Farm Fish Processing Unit wishes to expand their market, so they require an MD (*Makanan Dalam*/Domestic Food) permit certificate issued by BPOM RI. To fulfill this, the Sipujuk Farm Fish Processing Unit must meet the requirements for implementing GMP and SSOP.

The thing that must be considered in implementing the pre-requisite is the program must be documented. The documentation of the program is evidenced by the existence of Standard Operating Procedure (SOP), Work Instruction, and Recording Form that establish standards and production process instructions. Based on the results of a field observation to Sipujuk Farm, it was found that the Sipujuk

Farm does not have documents that explained the standards for implementing the pre-requisite program, namely GMP and SSOP. Based on that problem, this research was conducted to identify and design the documents to implement GMP and SSOP. The documented application of GMP and SSOP will help the Sipujuk Farm to implement a food safety system in the production process. The products produced will be of high quality and safety, and the Sipujuk Farm could get an MD certificate from BPOM RI.

1.2 Problem Formulation

The formulation of the problem in this research is how to design standard documents to implement Good Manufacturing Practices (GMP) and Sanitation Standard Operating Procedures (SSOP) in the Sipujuk Farm Fish Processing Unit, following the requirements set by the BPOM RI?

1.3 Research Objectives

The objectives of this study is to design documents consisting of Standard Operating Procedures, Work Instructions, and Recording Forms on the production process of smoked fishes at the Sipujuk Farm Fish Processing Unit. The document will be designed based on the principles of Good Manufacturing Practices (GMP) and Sanitation Standard Operating Procedures (SSOP).

1.4 Research Scopes

The research scopes in this study are as follows.

1. The design of GMP documents based on regulations or guidelines stipulated by the BPOM RI in the Food Industry, i.e. Good Manufacturing Practices for Food Production (GMP-FP).

2. The design of GMP and SSOP documents were carried out based on the activities of the Sipujuk Farm Fish Processing Unit.
3. The design of GMP and SSOP documents were based only on processes that are directly related to the assurance of the GMP and SSOP aspects.

1.5 Outline of Final Project Report

The outline of this final project report are as follows.

CHAPTER I INTRODUCTION

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

CHAPTER II LITERATURE REVIEW

This chapter contains the theoretical basis of several literature pieces that are used as a reference in solving problems in this study. The theory used consists of Good Manufacturing Practices (GMP), Good Manufacturing Practices for Food Production (GMP-FP), Sanitation Standard Operating Procedure (SSOP), SOP, Work Instruction, Recording Form, and previous research.

CHAPTER III RESEARCH METHODOLOGY

This chapter contains the stages of research methodology. The research stages began with field observations and conducting interviews with related parties. These stages are described in description form and depicted in the form of a flow chart.

CHAPTER IV DESIGN OF GMP AND SSOP DOCUMENTS

This chapter contains a review of the readiness for the implementation of GMP and SSOP as well as the design of

documents consisting of SSOP, Work Instruction, and Record Forms. Document design is carried out through the stages of identifying the structure and production process, details of activities, RACI Matrix, and document preparation.

CHAPTER V CONCLUSIONS

This chapter contains conclusions and suggestion from the results of research that has been carried out. Suggestion are given as consideration for further research.


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