

## CHAPTER I

### INTRODUCTION

#### 1.1. Background of Study

Tekwan is one of traditional foods from South Sumatra, Indonesia. It is small and round in shapes, like small meatballs. Tekwan is similar to Pempek, but is served in broth. There are some sides to complement while eating Tekwan, such as shrimp, wood-ear mushroom, vermicelli, and spring onion (HK. Rio and Dasir, 2017). Tekwan is fish-restructured product and there are several steps to produce, which are fish-meat grinding, ingredients (fish-meat, egg, flour, water, salt) mixing, dough shaping, and boiling (Febriansyah *et al.*, 2019; Tarmizi, 2017).

Meanwhile, there is a rising global trend, of which many people in the world are shifting their diets to plant-based diets. Not only the people, but also food manufacturers are developing innovations in plant-based foods, and these current plant-based foods are increasingly competitive with animal products (Alcorta *et al.*, 2021; Pointke and Pawelzik, 2022). Many reasons are driving them to substitute animal products for vegetable options, which some of them are high consumption of animal-based foods will lead to tremendous usage of land and water; unbalanced nutrition that can cause an increase in diabetes, cancer, and chronic diseases; and some concern about the animal-welfare and hope to replace meat with plant-based alternatives (Kazir and Livney, 2021).

Following what is trending globally, mung bean is selected to replace the use of fish-meat in Tekwan. Mung bean is one of essential legumes in Indonesia and has long been cultivated in Indonesia, especially in Java and South Sulawesi (Hapsari and Iswanto, 2018). Not only that mung bean is early maturing and more drought tolerant, but also mung bean is source of vitamins (A, B1, C), protein, dietary fiber, and bioactive compounds. Moreover, mung bean has many health benefits, such as hypoglycemic effect, anticancer, immunomodulatory properties, and anti-inflammatory effect (Nasution *et al.*, 2020). Mung bean contains 22.9 g of protein per 100 g of bean (Sari *et al.*,

2020), in which is quite similar to protein in Mackerel. Mackerel, is one of fishes used in production of Tekwan, contains 21.4 g of protein per 100 g of fish (Wahyudi and Maharani, 2017).

Furthermore, Porang flour is added to replace the use of egg in Tekwan as a binder. Porang flour is a derived product from Porang tubers (*Amorphophallus muelleri* Blume), that contains high amount of glucomannan. Due to its glucomannan content, Porang flour is mostly used as food additives, such as filler, thickening agent, and binder (Prastini and Widjanarko, 2015; Anggraeni *et al.*, 2014). Glucomannan is a water-soluble non-starch polysaccharide, as known as water soluble fiber and contains up to 9.2 g of protein per 100 g of tubers, which allows Porang tuber as a source of fiber and protein, as well (Dari *et al.*, 2021).

## 1.2.The Objectives of the Study

In order to follow the global trend and due to increasing demand on plant-based foods, the study aims to create plant-based Tekwan soup from local resources, which are mung beans and porang flour. In addition to preserving Tekwan as local food, the substitute of fish-meat and egg to mung beans and porang flour might enhance the opportunity for Tekwan to be accepted by more people, especially those who are following the vegetarian, vegan, or plant-based diets. Not only that plant-based Tekwan soup would have more local consumers, but also is eligible to be marketed internationally. Moreover, plant-based Tekwan soup can be a new alternative recipe to utilize mung beans and porang flour as local produces.