

# CHAPTER I

## INTRODUCTION

### 1.1 Background of study

The expansion of the analogue meat market is rapidly outpacing the demand of vegetarian consumers, with a growth rate of 7.9%/year. The global plant-based meat industry is projected to increase from US\$ 4.6 billion in 2018 to US\$ 85 billion by 2030. A milestone will occur in 2026, reaching US\$ 30.9 billion, although it is not yet comparable to the global prediction of the meat, poultry and seafood industry, which is estimated to be around US\$ 7.3 trillion by 2025 (Boukid, 2020).

Analogue meat or alternative meat is a term regarding the imitation of conventional meat characteristics including texture (meat fiber, meat water content) and sensory appearance, color, and taste. Analogue meat categories include (1) emulsion-type products (sausages), (2) minced products (patties, burgers, nuggets), and (3) muscle-type products (steaks). Analogue meat as protein-based products is classified as (1) plant-based meat, which is generally soy, (2) fungal fermented meat (mycoprotein) as well as stem cell developments, namely (3) cell-based meat (in vitro or cultured meat). Recent developments include proteins from sustainable sources, such as insect and algae proteins (Onwezen et al., 2021). Analogue meats are generally made from soy or wheat gluten, in addition to starch, and additives for flavor, color and texture (Zhang, 2021).

*Artocarpus altilis* (Park) Forsberg (Sukun) is a plant of the genus *Artocarpus* in the Moraceae family that is widely found in tropical regions such as Malaysia and Indonesia. On the island of Java this plant is used as a cultivated crop by the community. Sukun is not a seasonal fruit although it usually flowers and bears fruit twice a year. The skin of the fruit is yellowish green and there are polygonal segments. These polygonal segments can determine the stage of ripeness of the breadfruit (Setiyo Utami, 2012). *A. altilis*

is one of the food sources with the main content of carbohydrates (Silalahi and Mustaqim 2020).

Soybean (*Glycine max [L.] Merrill*) is a food crop that is used as daily food, industrial raw materials and animal feed. Soybeans are generally consumed in the form of processed foods such as tofu, tempeh, soy sauce, tauco, soy milk and other processed forms. The nutritional content of soybeans is quite large such as protein by 35%, fat 18% and carbohydrates 35% (Winarsi, 2010).

Soybean is a cheap source of protein, so it can be used to meet the nutritional needs of the community. The need for soybeans is increasing from year to year in line with the increasing population and increasing public awareness of plant-based protein foods. BPS data (2007 in Anonymous 2008) states that domestic soybean demand reaches approximately 2 million tons/year, while domestic production in 2007 only reached 608,263 tons. National soybean production in the last 8 years from 2000 to 2007 has decreased by an average of 7.20%. Soybean is a legume plant rich in vegetable protein, carbohydrates and fat. Soybean seeds also contain phosphorus, iron, calcium, vitamin B with a complete amino acid composition, making it potential for the growth of the human body (Pringgohandoko and Padmini, 1999). Soybeans also contain unsaturated acids that can prevent the onset of arterial sclerosis, which is the hardening of arteries (Taufiq and Novo, 2004).

Oyster mushrooms (*Pleurotus ostreatus*) are one type of woody mushrooms that can be consumed including the Basidiomycota group and the Homobasidiomycetes class. The name oyster mushroom is given because the shape of the mushroom hood is slightly rounded, oval and curved resembling an oyster shell (*ostreatus*) while the sideways growth of the mushroom stalk is called *Pleurotus Pleurotus* is classified as a saprophyte that grows on wood and in the wild pleurotus can live on living or dead woody plant tissue (Priyanto, 2009; Suharyanto, 2010).

White oyster mushrooms belong to the Basidiomycota group and the Homobasidiomycetes class (Susilawati, 2018) which is a type of woody

mushroom that is widely consumed. Oyster mushrooms are saprophytic organisms that can grow on decayed or dead organic media (Rosmiah, 2020). These mushrooms are rich in protein, fiber, carbohydrates, vitamins (thiamine, riboflavin, folic acid and niacin), minerals (Ca, P, Fe, K and Na), and low in calories and fat (Adebayo, et al., 2017). The nutrients contained in 100 grams of dry weight of white oyster mushrooms consist of protein 17.12 grams, fat 2.60 grams, carbohydrates 37.87 grams, energy 243.66 grams, fiber 30.25 grams and ash 4.8 grams (Rambey, et al., 2019).

## **1.2 Objective**

1. A lot of vegetarians who want to consume meat-based foods, to fulfill their desires analogue meat can be an alternative to process the food.
2. Introducing to the public that Dendeng Balado is not only made from the main ingredient of meat but can also be made from healthier vegetable ingredients. Especially for vegetarians so that they can also taste food made from meat.
3. To offer another flavor experience to meat-based food enthusiasts.