CHAPTER I

INTRODUCTION

1.1 Background of the study

"Loss of food is often seen as a negative impact on food security and environmental sustainability. However, it can be considered as an effective food loss if consumption of resource intensive foods instead of more efficient and equally nutritious alternatives is taken into account. We shall, therefore, define and quantify these opportunity food losses to be the loss of foodstuffs associated with animal intensive resource consumption instead of items based on plant protein products that are nutritionally comparable." (Shepon A, Eshel G, Noor E and Milo R 2018 The opportunity cost of animal based diets exceeds all food losses Proc. Natl Acad. Sci. 115)

Artificial meat is made out of proteins derived from vegetables which are treated in a way that replicates the characteristics of animal flesh. Artificial meat has a number of benefits, such as being more uniform and lasting longer when stored, including nutritional value that can be adjusted according to needs. Animal fat and cholesterol are not present in artificial meat. Therefore, people are starting to switch to consuming vegetable protein sources and meat products for vegetarians. Extrusion, including mixing, heat and cutting, can be used to produce products which are similar to the characteristics of animal flesh during the production of cured meat.

A significant increase in GHG emissions is due to the excessive consumption of resources intensive foodstuffs, for example animal based products, which results in a heavy burden on the food system. An important factor to improve health and reduce environmental pressure on the existing food system is expected to be shift towards a more sustainable diet with high intake of fiber from plant foods.

Indonesia is one of many the many tropical countries and has many kinds of exotic kinds of fruits and vegetables. In tropical countries like Thailand, Indonesia, Sri Lanka and India, jackfruit is not a new variety of fruit. There are a number of different desserts and food products that use this exotic fruit. But jackfruit flesh has the ability to absorb a wide variety of food and spices that are cooked with it, due to its sweet taste. The jackfruit (Artocarpusheterophyllus), also known as jack tree is a species of tree in the fig, mulberry, and breadfruit family (Moraceae). Jackfruit is a component that's familiar to most people. jackfruit, it's called "nangka" in Indonesia. Meanwhile, young jackfruit (green jackfruit) called Tewel in indonesia. For comparison for the price, young jack fruit has a much cheaper price

The development of a meat analogue to provide alternatives for meat has become a trend. The increase in consumers has driven this trending demand healthy diet, the concern about rising meat prices, the increase in the popularity of vegetarianism, and the growing consumer interest in related eating patterns such as the avoidance or reduced consumption of red meat. Meat analogue can be defined as food which structurally similar to meat but differs in composition. typical meat analogue is composed of a combination of ingredients such as water (50-80%), non-textured proteins (4-20%), textured vegetable proteins (10-25%), fat (0-15%), flavourings (3-10%), binging agents (1- 5%) and coloring agents (0-0.5%).” (IOP Conf. Series: Earth and Environmental Science 575 (2020))

“Young Jackfruit” or “tewel” is a very versatile ingredient where you can basically found them everywhere in the traditional market in Indonesia. for making an analogue meat, especially for making an analogue meat similar to beef which has the firm and chewy texture by adding soy bean as an additional protein and oyster mushroom to help re-creating the chewy texture of the meat. By mixing these three as its main ingredient and make vegan meat (analogue meat) to replace real meat and switch it up into a much healthier option.

Jackfruit is also a potential source of vitamins, minerals, carbohydrates, and fatty acids also have been proven, especially bioactive compounds including flavonoids, phenolic compounds, and carotenoids contents, which contribute to chronic inhibition (Qu et al., 2019; Saxena et al., 2011). Several studies have investigated alternative proteins to construct meat analogs due to their capability to provide meat-like structures. Different protein sources might contribute to different physiological qualities of the meat (Sakai, Sato, Okada & Yamaguchi, 2021).

The development of meat analogues as meat substitutes has become a trend. Growing consumer demand for healthy eating, concerns about rising meat prices, concerns about global warming, growing popularity of vegetarians, and growing consumer interest in related dietary habits such as avoiding or reducing red meat intake are contributing to this trend.

Red meat actually contains complete protein, it also contains vitamins, minerals and others that must be consumed by humans. when compared with vegetables that still have to be equipped with other additional ingredients for it to be complete. (Malcolm Watford and Guoyao Wu, 2018) But research has shown that regularly eating red meat and processed meat can raise the risk of type 2 diabetes, coronary heart disease, stroke and certain cancers, especially colorectal cancer. High meat intake is thought to increase the risk of coronary heart disease due to the high saturated fat content and the sodium in processed meats. There is substantial evidence that high saturated fat intake increases low-density lipoprotein cholesterol (LDLc) and high sodium intake increases blood pressure, both known risk factors for coronary artery disease. (Clarke et al. Citation1997; Rosendorff et al. 2015).

Reductions in consumption of animal protein based products have been seen as a major factor for the Healthy and Sustainable Diet throughout recent years. In order to compensate for the imbalance in availability or lack of supplies across the country, the Indonesian government has encouraged agriculture and development of this commodity. (Basril Basyar, 2020)

Remembering that the trends of healthy life following with the imbalance availability of meat products that at sometimes can be limited, the innovation of analogue meat can be one of the solution for making a protein where it has the similar and can substitute the nutrition that contains in a meat product.

1.2 Objective of the study

Meat production has been identified as a source of environmental change and natural resource depletion (Henchion, Hayes, Mullen, Fenelon, & Tiwari, 2017). Given the large demand for food based on animal protein such as red meat as an example, I as a writer want to create a food that is quite popular in Indonesia which is generally made from beef so that it can be enjoyed by people who don't eat animal products (vegans). Bearing in mind that young jackfruit (tewel) also has a high mineral and vitamin content, it is also hoped that this meat analogue can be a healthier substitute material compared to red meat. The objective of the study will be mention below:

1. Making This Analogue meat as a “Substitute” for real meat (Beef).
2. Making a healthier dish option.
3. Lessening meat consumption as one of the means for leading a healthy and affordable life style .