

CHAPTER I

INTRODUCTION

1.1 Background of the Study

The increasing prevalence of food allergies and dietary restrictions have created a significant demand for alternative food products that can accommodate diverse nutritional needs. Among these problems is the increasing number of individuals experiencing allergic reactions to beef products, which has led to the development of vegetarian alternatives to traditional beef foods (Martinez et al., 2020). This research focuses on the manufacture of vegetarian floss using mushrooms and mandai (fermented cempedak skin) as the main ingredients, overcoming health considerations and sustainability challenges. Beef floss, although popular in various Asian cuisines, has limitations for consumers with protein allergies or those who follow a vegetarian diet. According to Rahman et al., (2018), about 3- 5% of the global population experiences allergic reactions to various animal proteins, including those found in beef. These limitations create opportunities to develop plant-based alternatives that can replicate the texture and flavor profile of traditional floss while still being allergen-friendly.

Mandai is a traditional fermented food typical of Kalimantan made from fermented cempedak skin (*Artocarpus integer*) and is still not widely known by the Indonesian community outside the Kalimantan region (Bahari et al., 2021). Meanwhile, mandai has great potential as a functional food ingredient with a protein content of 4.5-6.2%, crude fiber 5.8-7.3%, as well as important minerals such as potassium, calcium, and magnesium (Rahmadi et al., 2018; Fathonah & Mushollaeni, 2020). The fermentation process changes the cellular structure of cempedak skin into a fibrous texture that resembles meat, while increasing the protein and fiber content of food (Winarno & Sulistyowati, 2019), the use of mandai also supports the concept of sustainable economy because it manages cempedak skin waste that is usually wasted, so that by introducing mandai through this vegetarian shredded product, it is hoped that

it can preserve the culinary heritage of the archipelago while providing an alternative source Healthy nabatin protein that is healthy for all Indonesian people.

The selection of mushroom and mandai as the main ingredients comes from their remaekable textural properties that are very similar to the fibrous consistency of beef floss. Oyster mushroom possess several advantages that make them ideal for this application. With their rich ummami flavor profile and protein content ranging from 20-30% of dry weight, they have been widely rocnized as an effective meat substitute in a variety of culinary applications (Bacth et al., 2022), Oyster Mushroom also contain all essential amino acids with a protein chemical score of 86% and are rich in B-complex vitamins including riboflavin, niacin, and pantothenic acid. The low fat content (2-3% of dry weight) with a fatty acid profile dominated by unsaturated fatty acids, particulary linoleic acid (68-84% of total fatty acids), provides significant nutritional benefits and support cardiovascular helath (Banlangsawan et al., 2020), Similary, fermented cempedak skin mandai offers numerous advantages for vegetarian fod product. Mandai contains 4.5-6.2% crude protein, 5.8-7.3% crude fiber, and 12,3-15,6% carbohydrates, creating a balance nutritional profile (Rahmadi et al., 2018). The fermentation process significantly enhances the bioavailability of nutrients while reducing antinutrient components found in fresh cempedak skin. Mandai is also rich in essential minerals including potassium (356mg/100g), calcium (78mg/100g), and magnesium (62mg/100g), further contributing to its nutritional value (Fathonah & Mushollaeni, 2020). Most importantly, the fermentation process transforms the cellular structure of cempedak skin into a fibrous texture that closely mimics meat fibers after processing.

1.2 The Objective of The Study

Based on the above background, the objectives of this research are:

1. To introduce mandai to a wider audience than its traditional geographical boundaries.
2. To create an allergen-friendly alternative to animal products.
3. To determine nutritional, fact, packaging, and market trends of Mandai.