

CHAPTER I

INTRODUCTION

1.1 Background of the Study

In recent years, the global demand for plant-based food products has increased significantly, driven by growing awareness of health, environmental sustainability, and ethical consumption. Among these products, plant-based milks such as almond milk and soy milk have become popular alternatives to dairy. However, the production of these plant-based milks generates a large amount of byproduct in the form of pulp, which is often discarded despite being rich in dietary fiber, protein, and micronutrients.

According to the Food and Agriculture Organization, roughly one-third of all food produced for human consumption, approximately 1.3 billion tonnes per year is lost or wasted globally, including significant quantities of by-products such as plant-based milk pulp (FAO, 2015). As a solution, the upcycling of food waste into value-added products has gained attention in sustainable food innovation. The use of agro-industrial by-products in functional food development not only helps reduce waste but also aligns with the growing demand for healthy, environmentally friendly foods (Hossain et al, 2019).

Okara is the solid by-product from soy milk or tofu production and is rich in dietary fiber, plant-based protein, and isoflavones (Prakash et al, 2020). Almond milk pulp, the solid residue from almond milk extraction, is rich in fiber, vitamin E, and monounsaturated fats, making it a valuable ingredient for functional food formulations (Silva & Sergiy, 2015). Almond by-products including the pulp contain bioactive compounds with antioxidant properties. This positions almond pulp as a promising ingredient for developing healthy plant-based snacks and functional foods.

Recently, plant-based furikake variants have emerged in response to vegan and sustainability trends. Due to its versatility, furikake is a suitable format for incorporating nutrient-rich by-products like okara and almond pulp, providing flavor, nutrition, and texture in one. Furikake, a traditional Japanese dry seasoning typically sprinkled over rice, presents a creative medium for repurposing these byproducts. By combining almond and soy pulp with bold Indonesian seasonings such as serundeng, this project aims to create a unique fusion product that reflects both sustainability and local culinary heritage. Integrating local spice blends into ready-to-eat food innovations increases consumer appeal and strengthens national culinary identity in the global market (Rachman et al, 2021). The result is a healthy, flavorful, and environmentally friendly furikake that can appeal to a wide range of consumers, especially those seeking nutritious and plant-based food options.

In conclusion, almond milk pulp and soy milk pulp (*okara*) offer high nutritional potential and can be successfully incorporated into functional food products. Combining them into an innovative Indonesian-spiced furikake addresses sustainable food practices, minimizes waste, and introduces a culturally rich, plant-based product to the market.

1.2 Objectives of the Study

The objectives of this study are following below:

1. Utilize almond milk pulp and soy milk pulp as alternative raw materials to reduce food production waste.
2. Evaluate the nutritional composition of the developed furikake, focusing on protein, fiber, and fat content