

CHAPTER I

INTRODUCTION

1.1 Background of Study

Natto is a North Japanese fermented soybean dish that existed since ancient Asian history (Afzaal M et al., 2022). Hamanatto, Itohiki and Daitokuji Natto are some of its forms, noted for their unique preparation practice and flavor (Afzaal M, et al.,. This fermented food which is popular because of its unique taste and texture as well as its nutritional elements are not only trending in Japan, but also recently become viral in Indonesia through various social media platforms where the peculiar taste, chewiness and health benefits have won over an increasing number of culinary adventurous.

Natto is normally composed of 59% moisture, 16% protein, and 10% lipid which are all prepared from soybeans fermented with *Grass bacillus* (Afzaal M, et al., 2022). Fermentation gave a musty taste, an oily texture and smell due to sticky and viscous polymers charged by compounds the glutamic acid, amino acids and fructan (Afzaal M et al., 2022). Natto is known to have a combination of unique flavors, traditionally paired with mustard, finely sliced onions, and steamed rice as well as its versatility making it suitable for seasoning in many other dishes like meat, vegetables or seafood (Afzaal, M. et al., 2022).

Given its potential health benefits, biological value combined with cultural inheritance of natto consumption, further research is warranted on production technology, microbiology and health effects of natto. The unique taste of natto and nutritional properties has secured its position as a beloved superfood in countless Asian recipes; however, furikake is just the latest Japanese delicacy to crossover into Western markets. This is another one of those where both natto and furikake highlight the depth of Japanese food culture, how tradition can blend with nutrition and regional identity.

Furikake is another common Japanese seasoning that you may use, and it will contribute a lot extra flavor and nutrients to various meals (2024 M. Bando). The title, gotten from "furi" (to swing) and "kake" (to scatter), points out the fact that it is an enhancing topnotch. Furikake provides plenty of protein, calcium, iron, dietary fibre as well as vital vitamins and minerals such as B and C vitamins, iodine and zinc (Bando M 2024). Suekichi Yoshimaru, a pharmacist in Kumamoto Prefecture, created Calpis Beginning in 1913 to help fight calcium deficiencies in Japan. Detailing how Furikake had its roots as an umami booster mainly made from dried fish bones, sesame seeds, seaweed, soy sauce and became a luxury seasoning during early Showa period which then was gifted to the relative. A variety of Furikake products are available from different regions in Japan,using local ingredients to cater for regional tastes : beans, vegetables, fruits, cheese, fish, seaweed, eggs and meat. The evolution of furikake and its use throughout Japan demonstrates how rice is a cultural product with respect to this heritage (Bando M, 2014). It is in part its distinctive flavor profile that often makes it teamed with natto, making it a nutritionally dynamic duo... and thus illustrating the varied culinary spectrum of Japan which has been expanding due to increasing consumer awareness towards food allergens and dietary preferences: those wanting their snacks or meal modifiable by calling for an allergy-free alternative.

A rise in consumer awareness of food allergies and dietary restrictions has led to an increase demand for allergen-free alternatives. Red kidney bean Natto could be a proper alternative as soy-free and plant-based protein-dietary fiber source, with the same health benefits of traditional natto but suitable for patients who are allergic to or intolerant towards conventional natto. Red bean (*Phaseolus vulgaris* L.) which is a plant that has been widely grown in subtropical regions such as Indonesia to produce 245.70 tonnes by 2016 [8]. 2020). They have a similar nutritional composition to other wide beans, in terms of relatively high protein and complex carbohydrates content. Unlike black beans, red kidney beans are a good source of essential minerals

such as calcium, phosphorus and iron, plus vitamins A and B1 (Mutmainah S 2019), making them an ideal candidate for preparing a healthy natto substitute. In addition, they contribute to Colombian agriculture and help the environment by avoiding importing soybeans.

1.2 Objectives of the study

The objectives of this study are following below:

1. To develop a soy-free natto alternative using locally sourced red kidney beans (*Phaseolus vulgaris L*) that is highly palatable alternative.
2. To assess the health benefits and customer acceptance andx identifying the potential market for red kidney bean natto as a healthy food alternative.