

CHAPTER I

INTRODUCTION

1.1 Background of The Study

Peanut sauce is a staple sauce or dip that is used worldwide in cuisines. Especially in Asian cuisines, it is mostly used in dishes such as satay, noodles, and even salads and veggie dips. Unfortunately for those who are allergic to peanuts, they are not able to enjoy such delicacy as for peanut sauce is made from ground nuts.

Peanut-based dishes are found throughout the regions of Indonesia, with many variations of processed foods using peanuts as a primary ingredient, such as pecel, gado-gado, rujak petis, tahu tek-tek, satay, karedok, and others. Peanut allergy is one of the most common causes of severe rapid hypersensitivity reactions to food allergens (Chalid et al., 2020)

Food allergy is an adverse reaction involving the immune system of food allergic individuals. It is caused by food protein, called an allergen. Food allergen is able to induce a specific immune response in genetically predisposed individuals through IgE-mediated mechanisms. The eight most common food allergens cause more than 90% of all food allergic reaction (International Food Information Council Foundation, 2014). The top eight food allergens are milk, egg, fish, soybean, shellfish (crustacean and mollusks), wheat, peanut, and tree nuts (e.g. walnuts). Peanut and soybean allergies are some of the most life-threatening food allergies, whereas both of them are consumed by large people in Indonesia due to their high nutrition. (Astuti. et al., 2018).

Peanuts are a major allergen causing severe allergic reactions or anaphylactic shock (Sampson 2003). The prevalence of peanut allergies worldwide ranges from 1 to 2% (Al-muhsen et al. 2003). Peanut allergies begin at an early age and continue throughout life, unlike milk and egg allergies

which can disappear as children age (Burks et al. 1998). The safe consumption limit (NOEL) for peanuts in sensitive children is 2mg (Flinterman et al. 2006).

To provide a solution for individuals with peanut allergies, sunflower seeds are utilized to make products nut-free and safe for those with peanut sensitivities.

Sunflower plant [*Helianthus annuus*], a leading oil seed crop which is cultivated primarily for its seeds, ranks second for edible oil production globally after soybean oil. It is native to Middle American region later being commercially available at global level. Sunflower is cultivated globally for its oil and protein content predominantly. Proteins present in sunflower seeds have favourable amino acid distribution. Also in addition, tocopherols, minerals, and vitamins are provided by sunflower seeds in substantial amounts. (Adeleke & Babalola (2020).

Sunflower (*Helianthus annuus*) belongs to the genus of the Asteraceae plant family (Compositae). Sunflower seeds are consumed throughout the world, and patients who are allergic to other nuts usually tolerate them. Sunflower seed allergy is rare. Allergy to sunflower seeds with tolerance to other nuts is rare. (Bravo, L. G. 2022).

Recognizing the challenges posed by nut allergies, sunflower seeds serve as a nutritious and versatile alternative in culinary applications traditionally dependent on peanuts, such as peanut sauce. Their increasing popularity as a substitute stems from their ability to offer a safe and flavorful alternative, ensuring that those with dietary restrictions can enjoy a broader range of foods without concern.

1.2 The Objectives of The Study

1. To provide viable culinary alternatives for individuals diagnosed with peanut allergies who desire to partake in dishes traditionally prepared with peanut sauce, thereby promoting inclusivity and expanding dietary options for those with food sensitivities or restrictions.
2. To ascertain the level of receptiveness and evaluate the palatability of sunflower seeds as a substitute ingredient in peanut sauce through sensory evaluations, to measure the market viability of sunflower seed-based alternatives.