CHAPTER I
INTRODUCTION

1.1 Background of the Study

Durian (*Durio zibethinus*) is one of the most economically and culturally significant fruits in Southeast Asia. In Indonesia specially Surakarta lawu kra and teji seeds having the most general and same shape. Its unique flavor and aroma have made it a sought-after delicacy, particularly in countries such as Malaysia, Indonesia, Thailand, and the Philippines. While the fruit's flesh is widely consumed and utilized in various food products, the seeds, which constitute approximately 15–20% of the fruit's total mass, are typically discarded as waste (Sari et al., 2021). This disposal not only contributes to organic waste accumulation but also overlooks the potential nutritional and functional value embedded in the seeds. Recent research has revealed that durian seeds contain substantial levels of carbohydrates—especially starch—along with dietary fiber and small amounts of protein and fat, suggesting their suitability as a raw material for processed food products (Sari et al., 2021; Sukmawati et al., 2020).

There has been growing interest in giving value of food waste by transforming it into value-added products, in line with the principles of sustainable food systems and circular economy. One promising innovation is the production of chips using durian seed flour or paste. (Ong., 2024.) demonstrated that blending durian seed paste with potato to create a fried crisp resulted in a product with 75.00% carbohydrate content and acceptable sensory attributes. Similarly, (Sofiyanita and Nurhayati., 2017) conducted an organoleptic test of durian seed chips and found positive responses in terms of taste, aroma, texture, and overall acceptability. These findings support the notion that durian seed chips could be developed into a novel snack option, leveraging local resources while addressing food waste and promoting food innovation. Additionally, research has shown that durian

seed flour may possess antioxidant properties, potentially enhancing the health benefits of products derived from it (Pratama et al., 2022).

Despite these promising findings, there is limited commercial application and academic exploration focused specifically on the processing techniques, preservation, shelf-life, and large-scale consumer preferences of durian seed chips. Most studies to date have been exploratory or small-scale. Further research is needed to optimize processing methods—such as slicing thickness, drying, frying temperature, and seasoning—as these factors significantly influence the texture and sensory qualities of the final product. Moreover, incorporating durian seeds into widely accepted snack formats like chips could offer economic opportunities for small- and medium-sized enterprises (SMEs) and rural communities involved in durian farming. With rising consumer demand for innovative, eco-friendly, and functional foods, developing durian seed chips could provide both nutritional value and sustainable food solutions.

1.2 Objectives of the Study

The objectives of this study are following below:

1. Develop a standardized method for processing durian seeds into chips, including cleaning, boiling, slicing, drying, and frying techniques.
2. Evaluate the nutritional composition of durian seed chips, including macronutrients such as carbohydrates, protein, fat, fiber, and moisture content.
3. Assess the sensory qualities (taste, texture, aroma, appearance, and overall acceptability) of the durian seed chips through organoleptic testing with selected panelists.