CHAPTER I

INTRODUCTION

1.1 Backgound of the Study

Pineapple is a tropical fruit commonly found and consumed in Indonesia. The skin of the pineapple, often discarded as waste or used in composting, contains valuable enzymes like bromelain, which have natural meat tenderizing properties. Bromelain, a group of proteolytic enzymes, is also known for its various health benefits, including its role as a digestive aid and its anti-inflammatory, pain-relieving, and wound-healing properties (Atamtajani, et al. 2020). Typically, this waste is used to create organic fertilizer or left to decompose, potentially leading to environmental pollution. However, the unique properties of pineapple waste offer an opportunity for innovative uses beyond waste management (Saraswaty, et al. 2017).

Indonesia produces more than 1 million tons of waste per year, consist of rotten fruit, leaves, and stems. Most of this waste is dumped into landfill areas without any treatment, leading to numerous environmental problems (Cahyari, et al. 2018). Indonesia is a large pineapple producing country, and resulting in waste that causes environmental issues. One pineapple fruit has a total weight of 400 grams, which 60 grams is peel waste. To reduce such pineapple peel waste (PPW), processing it into environmentally friendly techniques is necessary. PPW contains compounds, acid, vitamins A and C, which are antioxidants (Saraswaty, et al. 2017).

Shrimp is one of the export market in Indonesia playing an important role in Indonesia's foreign exchange earnings. The processing of shrimp results in waste, which accounts for approximately 30% to 75% of the shrimp's total weight. The increasing problem of shrimp waste is needs to be addressed. This not only

adds value to the shrimp processing business but also helps to overcome environmental pollution problems. One way to utilize the by-products of shrimp processing is to process them into natural food flavor powders (Suparmi, et al. 2020).

This study explores the potential of repurposing pineapple waste and shrimp shell waste into a meat tenderizing seasoning rub. By transforming these byproducts into culinary ingredients, waste can be reduced and economic value added to pineapple and shrimp-producing regions. The research will assess the effectiveness of pineapple waste and shrimp shells in tenderizing meat and enhancing its flavor, providing a sustainable alternative to conventional meat tenderizers. This approach addresses environmental concerns and promotes the beneficial utilization of natural resources.

1.2 Objectives of the Study

The objectives of this study are following below:

1. This research aims to create a low-sodium meat seasoning rub using food waste from pineapple, shrimp, seaweed, shiitake mushroom stems, and other ingredients like lemon peel, rosemary, onion powder, black pepper, low-sodium salt, and sugar, promoting a healthier option for reducing sodium intake.
2. This research aims to evaluate the effectiveness of these ingredients in creating a low-sodium seasoning rub that enhances meat's flavor and tenderness. The findings could pave the way for innovative, heart-healthy seasoning products in the future.