CHAPTER I
INTRODUCTION

1.1 Background of the Study

Cookies are one of the types of snacks. Cookies have various flavors and shapes. The diverse flavors can be distinguished by the additional ingredients used in their making (Suarni, 2009). The name "cookies" is derived from the Dutch word "koekje," which literally means "small cake." Cookies are made from sweet dough that is shaped small and then baked. Cookies are very practical and suitable to be enjoyed with tea or milk in the afternoon. The main ingredients for making cookies consist of wheat flour, sugar, and fat (Millah et al., 2013). However, gluten, the main protein in wheat flour, is associated with three conditions: gluten intolerance, also known as celiac disease, gluten allergy, and non-celiac gluten sensitivity (Raungrusmee, 2020).

Studies have shown that soybean flour has a higher protein content compared to wheat flour, with around 40% - 50% protein (Bryant & Probst, 2019). Soybeans naturally do not contain gluten, making soybean flour an attractive alternative for individuals with gluten intolerance or sensitivity. Research has shown that soybean flour is rich in fiber, which is important for maintaining digestive health and controlling blood sugar levels (Singh et al., 2017). Soybeans contain various micronutrients such as isoflavones, phytosterols, and other antioxidants, which have been proven to have various health benefits, including reducing the risk of heart disease and cancer (Messina, 2016).

Soybeans have been utilized in various food and beverage products due to their rich nutritional content and beneficial functional properties. Some of these products include tofu and tempeh, soybean oil, and soy milk. By summarizing the advantages of soybean flour and its utilization in

various food products, this research aims to explore the potential of producing high-protein and gluten-free cookies using soybean flour as the main ingredient. It is hoped that this research will contribute to the development of healthy and innovative food products.

Research shows that consuming oats can provide various health benefits. According to Whitehead et al. (2014), the beta-glucan fibre found in oats is effective in lowering blood cholesterol levels, which in turn can reduce the risk of heart disease. The study also emphasizes that consuming oats can help control blood sugar levels, which is highly beneficial for individuals with type 2 diabetes.

According to a study by Lin et al. (2013), consuming canola oil can help lower total cholesterol and LDL levels, as well as increase HDL cholesterol levels. The study also notes that canola oil has a low saturated fat content, making it a healthier choice compared to butter.

The production of cookies with high protein content and gluten-free has garnered significant attention in the food industry, considering the consumers' demand for healthier and diet-friendly products. In an effort to meet these needs, the use of soybean flour as a substitute for wheat flour has become a promising option. Additionally, the use of canola oil rich in good fats and oat flour high in fibre can also provide added value in terms of health.

1.2 Objectives of the Study

The Objectives of this study are following below:

1. In order to follow the global trend and due to increasing demand on gluten-free and healthy foods, this research aims to create gluten-free and high-protein cookies using soybeans.
2. Providing easily consumable and high-quality energy sources for beginner gym enthusiasts who require additional calorie and protein intake to support muscle growth and effectively achieve weight gain goals.
3. To meet the needs of consumers who have sensitivity to gluten or celiac disease.