

# CHAPTER I

## INTRODUCTION

### 1.1. Background of The Study

Psyllium husk, derived from the seeds of *Plantago ovata*, is a dietary fiber known for various health benefits, particularly in managing constipation, blood sugar levels, and cholesterol (Anderson, J. W., et al. 2015). In terms of blood sugar control, psyllium has been shown to help lower fasting blood sugar and HbA1c levels, as well as improve insulin resistance, which is highly beneficial for individuals with type 2 diabetes. (Bell, L. P., Hectorne, K., Reynolds, H., & Hunninghake, D. B. 2015) Furthermore, studies indicate that psyllium can reduce total and LDL cholesterol levels, with its soluble fiber content aiding in the reduction of cholesterol absorption in the intestines, thereby lowering the risk of heart disease (Ghobadi, Z., & Poor, Z. 2020). Recently, there's been interest in incorporating psyllium into foods for two main reasons: as a natural alternative to certain additives and to enhance the nutritional content of these foods. Thus, psyllium husk is a versatile fiber supplement with scientifically proven health benefits (Zhang, L., & Yang, H. 2018). This review explores various methods of incorporating psyllium into different foods, such as gluten-free bread and dairy products, while also discussing the advantages and limitations of this approach.

Konjac glucomannan (KGM), also referred to as konjac, or konnyaku, is derived from the tubers of the *Amorphophallus konjac* K. Koch plant, commonly known as the elephant foot yam. Konjac glucomannan (KGM), also known as konjac, conjac, or konnyaku (BeMiller, 2019), is extracted from the tubers of *Amorphophallus konjac* K. Koch, which is also known as the elephant footyam. The tubers are harvested after 2-3 years when the glucomannan content has reached up to 30-50% (Pegg, 2017). Konjac glucomannan is a natural polysaccharide derived from the root of the konjac plant

(*Amorphophallus konjac*). Glucomannan is known for its remarkable ability to absorb water, up to 50 times its weight, resulting in the formation of a thick gel in the digestive tract. This makes glucomannan popular as a weight loss supplement because it can increase satiety and reduce calorie intake. Additionally, research shows that glucomannan can help lower cholesterol and blood sugar levels, as well as improve digestive health by acting as a prebiotic that supports the growth of beneficial bacteria in the gut (Chen et al., 2015; Keithley & Swanson, 2015).

Chia seed (*Salvia hispanica* L.) is the seed of a plant native to Mexico and Guatemala. Chia seeds are known for their high nutritional content, including fiber, protein, omega-3 fatty acids, antioxidants, and various vitamins and minerals. According to research by Ullah et al. (2016), chia seeds have the potential to improve cardiovascular health, control diabetes, and enhance digestive health. Another study by Mohd Ali et al. (2016) showed that consuming chia seeds can lower blood cholesterol and triglyceride levels while increasing HDL cholesterol levels, which is beneficial for heart health. Additionally, research by Porras-Loaiza et al. (2014) indicated that the antioxidants in chia seeds can help protect the body from oxidative damage and reduce the risk of chronic diseases. Consequently, chia seeds have become a popular choice as a healthy addition to the daily diet. Honey and lemon, known for their sweet-tangy flavor profile and array of health benefits including immune-boosting properties, soothing effects on sore throats, and skincare benefits due to their antibacterial properties, are widely recognized as a versatile combination often used to enhance various dishes and beverages while promoting overall wellness.

Honey and lime are often used as natural flavorings in various drinks and foods due to their health benefits and refreshing taste. Honey is known for its antibacterial and antioxidant properties, which can help boost the immune system and accelerate wound healing. Some studies have shown that honey can also reduce symptoms of cough and sore throat (Molan, 2016). Lime, on the

other hand, is rich in vitamin C, which is important for skin health and the immune system. Lime also contains flavonoids with antioxidant and anti-inflammatory properties (Benavente-García & Castillo, 2018). The combination of honey and lime is commonly used in beverages like hot tea to relieve cold symptoms and enhance overall health.

## **1.2. The Objectives of The Study**

The objectives of this study are following below:

1. **Assess Fiber Content:** Measure the amount of fiber in psyllium husk and konjac to determine their suitability for a high-fiber detox jelly.
2. **Evaluate Texture and Taste:** Test the texture and taste of the detox jelly made with psyllium husk and konjac to ensure it is pleasant and enjoyable for consumers.
3. **Explore Health Benefits:** Investigate the potential health benefits of the detox jelly, such as improved digestion and detoxification, to understand its impact on consumer well-being.