

# CHAPTER I

## INTRODUCTION

### 1.1 Background of the Study

*Averrhoa bilimbi* Linn., commonly cultivated for its medicinal properties in various tropical and subtropical regions, has gained attention for its traditional use in treating ailments such as diabetes mellitus and hypertension, as well as its antimicrobial properties. However, the focused advantage of bilimbi is that it is rich in potassium, Potassium relaxes the walls of the blood vessels, lowers blood pressure so it can really help people with high blood pressure. This review aims to compile and organize existing literature on *A. bilimbi*, linking traditional uses with contemporary scientific findings regarding its efficacy in managing different health issues.

This research focused on both traditional knowledge and modern research that highlights the plant's pharmacological effects, which include antidiabetic, antihypertensive, thrombolytic, antimicrobial, antioxidant, hepatoprotective, and hypolipidemic activities. Given the extensive research on *A. bilimbi*, it holds significant potential in complementary and alternative medicine.

Historically, this plant has been valued for its medicinal applications, with references dating back to the 14th century in Egyptian medical texts. Various preparations, such as decoctions, infusions, powders, and pastes, have been utilized in traditional medicine to prevent and treat diseases and promote overall health. The World Health Organization (WHO) notes that approximately 80% of people in Africa and Asia rely on traditional medicine for their primary healthcare needs, and there is a growing acceptance of herbal remedies in Europe, Australia, and North America.

This review emphasizes the medicinal properties and practical applications of *A. bilimbi*, advocating for its development into a therapeutic option for managing diabetes and hypertension. The methodology involved a systematic collection and evaluation of recent advancements related to *A. bilimbi's* role in chronic disease treatment. Overall, this review seeks to underscore the diverse traditional claims and pharmacological activities of *A. bilimbi*, while also highlighting the need for further scientific research to isolate its active components using advanced techniques. (Ahmed & Alhassan, 2016)

Fermentation is another anaerobic (non-oxygen-requiring) pathway for breaking down glucose, one that's performed by many types of organisms and cells. In fermentation, the only energy extraction pathway is glycolysis, with one or two extra reactions tacked on at the end.

Kimchi, a traditional Korean fermented food, is widely consumed in Korea and recognized as one of the country's most popular ethnic dishes. This review aimed to systematically assess existing clinical studies on kimchi and evaluate its overall health benefits. Using Fermentation method could increase the benefits of *A. Bilimbi* as main ingredients such as antidiabetic, antihypertensive, antithrombotic, hypolipidemic, hepatoprotective, cytotoxic, antimicrobial, wound healing, anthelmintic, and antioxidantof. (Surya & Nugroho, 2023b)

Hot sauce, often referred to as chili sauce, is a condiment that enhances the flavor of food by introducing enjoyable spicy sensations. It is widely used in various culinary applications within the food service industry and is particularly popular in Asian countries, as well as in the USA, Mexico, and several Western nations. In North and South America, hot sauces are typically made from peppers such as cayenne, chipotle, habanero, and jalapeño. In Korea, gochujang and red pepper sauces are favored, while Sriracha sauce is a well-known hot sauce from Thailand. Conversely, hot sauces are less commonly used in many European countries. The choice of spices added to foods often reflects cultural influences and personal tastes, leading to the use of hot sauces

with a variety of dishes, including meats, vegetables, whole grains, and eggs. Cultural differences in the acceptance of hot sauce types are primarily influenced by consumption habits, product characteristics, and psychographic traits. So the main ingredients of my product would increase all the benefits from the Kimchi method and turning the *Bilimbi* kimchi to hot sauce for easy consumption for the customers.

## **1.2 The Object of the Study**

The objectives of this study are following below

1. Providing more options for hot sauce products to the public.
2. Provides a hot sauce that has more benefits compared to other hot sauces.
3. Maximizing the use of *Bilimbi* fruit as a fruit that can be consumed with many health benefits.