CHAPTER I

INTRODUCTION

1.1. Background

Tofu is a widely consumed plant-based food product in the world. It is a product made of soybeans, in which soymilk is extracted, coagulated, and pressed into blocks of curd. Tofu is usually made in square shape, in which it has beany flavor and has very soft texture. One type of coagulant used in tofu production is acid type coagulant such as lactic acid and acetic acid (Hui, 2006). The problem of using lactic acid is that it might cause allergic reaction to the consumers, while acetic acid is not a natural food additive (Hui, 2006). To solve this problem, acidic compound from fruits and herbs are used to substitutes the coagulant. Key lime (*Citrus x aurantifolia*) was used as the substitute of acidic coagulant. According to Sanjay (2008), natural sources of acid are able to coagulate tofu. Furthermore, natural source of acid such as fruit also increases the nutrition value of tofu due to the vitamin being water soluble (Sanjay *et al.*, 2008).

Key lime is a type of fruit which is grown generally in warm tropical to subtropical regions such as India, Mexico, America, Egypt, and West Indies. Key lime has the characteristic of size from 2.5–5 cm. diameter, has high acidity, strong aroma, tart and bitter, with 7–8% citric acid content (Khan *et al*., 2017).

1.2. Research Problem

This research was using natural food additives such as key lime (*Citrus x aurantiifolia*) the coagulant of tofu. However, these ingredients are still rarely used as food product even though it is locally available in the market. Furthermore, many types of coagulant used in tofu production are using synthetic materials which might cause fear to the consumers due to the side effects of chemical food additives consumption. Due to this, key lime might be a suitable alternative for tofu production and therefore, this research was conducted.

1.3. Objectives

1.3.1. General Objectives

The general objective of this research was to utilize key lime (*Citrus x aurantiifolia*) as natural coagulant of tofu.

1.3.2. Specific Objectives

The specific objectives of this research were:

1. To prepare natural acidic coagulant used in producing *momen*/regular tofu.
2. To determine effect of different type of coagulant and temperature on the physiochemical, total yield, sensory characteristics of tofu, and select best treatment based on tofu characteristics.
3. To determine the optimum selected formulation/treatment based on sensory characteristics of tofu.