



CHAPTER I

INTRODUCTION

Wheaten foods have an important role in the diet and culture of Asian countries since early times. Steamed bun is one of the common foods in China, East and South-East Asian regions (Peng, Shun-he, and Chuan, 2007). Filled Chinese steamed bun, also known as “Salapao”, is a type of steamed, filled bun or bread-like item in Chinese cuisine. The filling can be meat or cream such as minced pork, barbecued pork, custard cream, etc. It has been a favourite food item among Thai people for generations. Due to its increasing popularity, mass production of filled Chinese steamed bun is necessary to catch up with the high demand (Sotarot and Maisuttikul, 2008). Over 1.3 billion people in Asia consume steamed bun regularly (Peng *et al.*, 2007). The production of Chinese steamed bun is expected to grow ahead for many years.

However, this product is a fresh, high moisture food with water activity more than 0.95 (Smith *et al.*, 2004) and normally the shelf-life is no longer than 3 days. Preservation methods of this product are chilling or freezing. With the rapid urbanization taking place in Thailand and people having less time for home cooking, a convenience or ready-to-eat foods become more necessary. The commercial production of frozen steamed bun has made it more convenient for consumers (Huang, 1999). It is one of the most popular ready-to-eat foods in Thailand but it requires frozen storage and the freezing process is high energy-consumed process. Hence, there is a need to develop safe, nutritious and acceptable products which can be stored without refrigeration.

Hurdle technology was developed as a new concept for the realization of safe, stable, nutritious, tasty and economical foods. The microbial stability and safety of most foods is due to the combined action of several preservative factors, called “hurdle” (Thomas, Anjaneyulu, and Kondaiah, 2008). It employs the intelligent use of combinations of different preservation factors or techniques to achieve mild, but reliable preservation effort (Leistner and Gorris, 1995). Over the years the insight into the hurdle effect has been broadened and the application of hurdle technology was extended (Leistner and Gorris, 1995). As the main objective is to prevent microbial spoilage and food poisoning, several hurdles are used minimally to obtain the optimum

combination to give good sensory qualities, safety and stability as well as savings of energy and money (Das and Radhakrishna, 2001; Grijspaardtink, 1994; Karthikeyan *et al.*, 2000).

Hurdles such as pH, water activity (a_w) and preservatives had been used to develop South African steamed bread which has an extended shelf-life (Lombard *et al.*, 2000). However, adjusting of a_w and pH are limited from the sensory attribute and preservative addition is controlled by the regulation. Since, there is no study on the process development of shelf-stable custard cream filled Chinese steamed bun, so this study was undertaken to develop a safe and acceptable custard cream Chinese steamed bun (CCSB), aiming to have shelf-stable at ambient temperature for 10 days. The outcome of this research will benefit a better distribution and marketing using hurdle technology.