CHAPTER 1

Introduction

1.1. Rationale/ Principles, Theory and/or Hypothesis

Longan (*Dimocarpus longan* Lour.) has been planting popular in the northern and southern provinces of Vietnam. Fruit has a high economic value for domestic and export markets because of its delicious taste and excellent nutritional properties. In 2009, the production area of longan was around 122,000 ha (Hai, 2011). 'Long' longan is one of the most popular cultivars and has high yield in Vietnam (Tuc, 1999; Dat, 2003). Although longan fruit has high values in economic and nutrient, but the shelf-life of fruit is short (3 to 4 days) at ambient temperature after harvesting (Hoan *et al*., 2001; Tongdee, 2001). The main factors affect the shelf-life and quality of longan fruit are browned pericarp, water loss, fungal and microbial decay (Hoan *et al*., 2001; Tongdee, 2001; Apai, 2009). In recent years, there were several reports of 'Long' longan fruit treatments in Vietnam such as carbendazim soaking (Hoan *et al*, 2001); chitosan coating (Huyen and Thuy, 2011); SO_2 fumigating (Thuy and Duyen, 2011); and sodium metabisulfite dipping (Hai *et al*., 2011). The results showed that fruits could be maintained a good postharvest quality for 20 days in cold storage. However, the percentage of fruit decay was still high (more than 10%), and high SO_2 residue (approximately 44 ppm) (Hoan *et al*., 2001; Huyen and Thuy, 2011; Thuy and Duyen, 2011). In addition, there were many reports on the negative effects of the toxic residue of SO_2 and carbendazim to the health of people. Consumers are becoming careful with inorganic and toxic preservative agents even if they were not more than the minimum acceptable amount. Developing efficient methods for replacing SO_2 and carbendazim treatments and prolonging the shelf-life of longan fruit more than 20 days are needed.

1.2 Purposes of the study

To study the effects of oxalic acid, sodium hypochlorite and wax coating on postharvest qualities and storage life of Vietnamese longan fruit cv. Long during low temperature storage.

1.3 Education/application advantages

Application of oxalic acid, sodium hypochlorite and wax coating instead of SO_2 or carbendazim methods for longan fruits cv. Long will provide an interesting technological alternative method for the maintenance of postharvest quality during storage period. Furthermore, results from this research will help Vietnamese people not only to handle a new technology on preservation of 'Long' longan fruit but also to increase the price at the peak of harvesting period.

1.4 Location

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