

Thesis Title	Effect of edible coating film on storage life of mango cv. "Nam Dok Mai"
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Abstract

Effects of edible coating film on storage life and quality of mango cv. "Nam Dok Mai" (*Mangifera indica* L.) stored at 13°C and 90 - 95% relative humidity was studied and divided into 3 experiments. In the first experiment studied on the effect of coating mangoes with 0.5% 1.0% and 1.5% chitosan solutions. Coating mangoes with chitosan at all concentration were delayed ripening and qualities change better than the control. The fruits were coated with 1.0% and 1.5% chitosan solution delayed weight losses, firmness, colour change and storage life for 40 days. There were storage life longer than the fruits coated with 0.5% chitosan solution and the control. However coated mangoes with 1.5% chitosan solution was more off-flavor than 1.0% chitosan solution after storage life 36 days. Observation by Scanning Electron Microscope (SEM) revealed that the chitosan films covered overall surface of the treated fruits. Effect on increased the internal CO₂ and decreased the internal O₂ levels of the fruits. This reason gave the effect on decreased respiration rate. The second experiment studied on the effect of coating mangoes with 2% sucrose stearic acid ester, 2% sucrose palmitic acid ester and 2% sucrose lauric acid ester solutions. Coated mangoes with sucrose palmitic acid esters delayed colour changes and firmness, increased the internal CO₂ and decreased the internal O₂ level had the effect on reduced respiration rate better than coated mangoes with 2% sucrose stearic acid ester and 2% sucrose lauric acid ester solutions. The fruits were coated with sucrose fatty acid ester solution and the control had storage life 28 and 16 days respectively. There were off-flavor on 24 days after storage. The last experiment studied on the effect of 1% chitosan solution compared with 2% sucrose palmitic acid ester solution stored at 13 °C and 90%-95% relative humidity. Mangoes were coated with 1% chitosan coating

results showed that coating the fruits with chitosan films retarded the changing of fruit firmness, peel colour and reduced respiration rate than the fruits coating with sucrose palmitic acid ester and uncoated fruits. The storage lives of coated mango fruits with 1% chitosan, 2% sucrose palmitic acid ester and uncoated fruits were 32, 28 and 16 days, respectively.

Keywords: mango cv. "Nam Dok Mai"/ coating / edible film / storage