Title Effects of Wax Coating on Postharvest Quality of 'Sai Nam Paung' Mandarin (*Citrus reticulata* BLANCO)

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ABSTRACT

Postharvest quality of 'Sai Nam Paung' mandarin (*Citrus reticulata* Blanco) was studied after coating with Teva wax (18% food grade shellac and polyethylene) and Rosy wax (18% w/v Polyethylene and resin) and kept in cold storage at 5 °C or ambient temperature (~ 28 °C) for a month. Percentage of weight loss, fruit height, shelf life, glossiness, off flavor development, total soluble solid, titratible acidity, pH and peel color were evaluated at one week intervals while respiration rate was determined on day 28th.

Coating the mandarins with Teva and Rosy waxes was shown to slow down the percentage of weight loss, respiration rate, fruit height, glossiness and shelf life reduction and peel color "a*" change. However, the concentration of wax had no effect on off flavor, TSS/TA ratio, pH, L, a* and b* value. Significant positive results were observed on the effect of storage temperature on percentage weight loss, fruit height, glossiness and shelf life of fruit. High respiration rate was detected in fruits stored at low temperature whereas TSS/TA ratio, pH, peel color were not affected. Fruits coated with Teva wax did not show any disease incidence during storage but those coated with Rosy wax showed stem end rot on 12 days after storage. At ambient temperature, wax coated fruit had shelf life of more than 20 days as compared to uncoated fruits which lasted about 9 days. For cold storage, wax coated fruits lasted up to 2 months as compared to uncoated fruit that lasted about a month.

This study suggested that low temperature was still necessary to store mandarin for 1 month without changing the appearance and sensory quality although commercial coating could be a good option to increase shelf life of 'Sai Nam Paung' mandarin. The combination of wax coating and storage temperature at 5 °C can be used successfully for long term storage of 'Sai Nam Paung' mandarin for 2 months.