

Nongnuch Soontornrujanawong 2009: Effects of Bagging Materials on Quality of Pitaya (*Hylocereus undatus* and *Hylocereus polyrhizus*) Fruits. Master of Science (Packaging Technology), Major Field: Packaging Technology, Department of Packaging Technology. Thesis Advisor: Associate Professor Vanee Chonhenchob, Ph.D. 120 pages.

The effects of bagging periods on growth and quality of the white pitaya (*Hylocereus undatus*) and the red pitaya (*Hylocereus polyrhizus*) were studied. Pitayas were bagged with the white paper bags (PW) at different growth periods (10, 15, 20 and 25 days after full bloom [DAFB]) and compared with the non-bagged pitayas used as a control. Pitayas were harvested at maturity at 30 DAFB and valuated on size, weight, skin defect, skin color, firmness, total soluble solid content (TSS), titratable acidity (TA) and ascorbic acid. The results showed that weight of the white and red pitayas bagged at 20 and 25 DAFB were highest and not significantly different ( $p \leq 0.05$ ) from the control. Apparently, bagging could reduce skin defects in pitayas. The most appropriate bagging periods for the white and red pitayas was at 20 DAFB as it gave the highest weight and best skin appearance with decreased defects. Newly developed bagging materials with different wavelength characteristics (B-1 and G-1) were also compared with the white paper bags and control. White and red pitayas were bagged at 20 DAFB and harvested at 30, 34 and 38 DAFB. The results showed that white pitayas bagged with B-1 and G-1 had highest weight at 30 DAFB. Red pitayas bagged G-1 had the highest weight after harvest at 30 DAFB. Bagging with G-1 gave the highest total soluble solid content (TSS) in white and red pitayas harvested at 30 and 34 DAFB. Bagging with G-1 could accelerate pitaya development due to its higher heat accumulation characteristics as compared to the other bagging materials. All bagging materials reduced skin defect in pitayas as compared to control. In general, bagging with B-1 gave the least severity of skin defect as compared to the other treatments.

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Student's signature

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Thesis Advisor's signature