

Suthiachar Buraman 2011: Effect of Modified Atmosphere Packaging on Quality and Shelf Life of Fresh Cut Durian. Master of Science (Packaging Technology), Major Field: Packaging Technology, Department of Packaging and Materials Technology. Thesis Advisor: Associate Professor Vanee Chonhenchob, Ph.D. 121 pages.

Effect of modified atmosphere packaging on quality and shelf life of fresh cut durian stored 5 °C was studied. The oxygen (O<sub>2</sub>) and carbon dioxide (CO<sub>2</sub>) tolerances of fresh cut durian were 10 kPaO<sub>2</sub> and 10 kPaCO<sub>2</sub>, respectively. The optimum controlled atmosphere (CA) condition for fresh cut durian was 10 kPaO<sub>2</sub>+10 kPaCO<sub>2</sub>. Fresh cut durian was packed in the polypropylene (pp) tray, sealed with high gas permeable films (NPEA-15 and NPPE-17) compared with the commercially available film (NPPE-05) and stored at 5 °C. The results showed that fresh cut durian packed in NPEA-15, NPPE-17 and NPPE-05 could maintain the acceptable quality for 20, 24 and 12 days, respectively. In-package gas composition of NPPE-05, NPEA-15 and NPPE-17 packs at equilibrium were 1 kPaO<sub>2</sub>+31 kPaCO<sub>2</sub>, 3 kPaO<sub>2</sub>+13 kPaCO<sub>2</sub> and 5 kPaO<sub>2</sub>+11 kPaCO<sub>2</sub>, respectively. Low O<sub>2</sub> and high CO<sub>2</sub> levels in the NPEA-15 and NPPE-17 were appropriate for the storage of fresh cut durian. Fresh cut durian in the NPPE-17 pack had the highest firmness, the lowest weight loss and the lowest ethanol in juice throughout the storage. Changes in color, dry matter, total soluble solids, titratable acidity and total phenolic compounds were not significantly (P > 0.05) different among all treatments.

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Thesis Advisor's signature