

Title Postharvest Damage and Impact Bruising of Young Coconut Fruit
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Abstract

Young coconut fruit is one of the most favorite fruits of Thailand. Its juice and flesh are tasty and rich with nutritional value. Nowadays, the coconut fruit is subjected to mechanical loadings, and impact, during handling and transport, results in bruising. Such postharvest damage increases production cost, slows down the production process and deteriorates product quality. This research was aimed to (a) assess the postharvest damage of the coconut fruit at markets and (b) determine mechanism of bruising of the young coconut fruit subjected to impact. Methodology comprised survey to collect data on postharvest bruising at selected retailers and wholesalers, and analysis. Samples of young coconut fruit were brought to drop test at different height with various plunger impactors. Impact energy and bruising were measured and analyzed. Results showed that bruising of the young coconut fruit by the wholesalers varied from 65 to 100%, while that of the retailers ranged from 50 to 100%. A very good linear correlation between the bruise volume V , the impact energy E beyond threshold, bruise occurrence probability P and the impact energy below threshold was found. Maturity affected the V - E and the P - E regression graphs, and the threshold as well. Threshold impact energy causing bruising of the sound young coconut (Probability = 1) was 0.0252 J.