

Effect of harvesting time and climatic variation on postharvest qualities of early-seasonal 'Nam Dok Mai' mangoes in Chiang Mai

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Abstract

The effect of harvesting time, weather condition and fruit-size at the bagging period on postharvest qualities of early-seasonal 'Nam Dok Mai' mango was investigated during the 2010-2011 season, in cooperation with farmers of the High-Quality Mango Growers' Community Enterprise for Export, Phanai Sub-district, Phrao District, Chiang Mai Province. The experimental design was 4x7 factorial in RCB with four fruit sizes at bagging (8, 9, 10 and 11 cm) and seven harvesting times (45, 50, 55, 60, 65, 70 and 75 days after bagging). These 28-treatment combinations were done in five orchards (blocks) using 15 fruits/block. Fruits harvested between mid-March and mid-April 2011 were sunk in various concentrations of saline solution (0.0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5 and 6.0%) to determine maturity of the fruit. The results revealed that there was a moderate correlation between the harvesting time and fruit maturity and with total soluble solids (TSS) in ripe fruit. Moreover, the weather conditions in mid-March, that were regarded as abnormal heavy rain and rapid temperature drop, delayed the fruit maturity and harvesting time by about 1-2 weeks and decreased the fruit peel quality together with the premium grade percentage. Thus, the harvesting time and weather conditions strongly influenced postharvest qualities of early seasonal 'Nam Dok Mai' mango, especially TSS of ripe fruits and fruit peel quality.