

**Title** Harvest maturity detection for ‘Nam Dokmai #4’ mango fruit (*Mangifera indica* L.) in consideration of long supply chains

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### **Abstract**

Harvest maturity criteria were specified for ‘Nam Dokmai #4’ mango fruit. Focus was on harvest time decisions for long supply chains with minimum risk of ripening during reefer transports despite acceptable potential for subsequent postharvest ripening. For eleven fruit lots, harvested within 24 d (91–115 d after full bloom; DAFB), postharvest storage behavior at 14 °C (50–60% RH; ethylene absorption) was explored, distinguishing harvest maturity stages and post-storage quality levels, respectively, by means of principle component and cluster analysis. The impact of harvest maturity on post-storage quality was described by a partial least squares regression model. Among nine independent variables, titratable acids and the CIE hue angle of the mesocarp were the two most decisive attributes specifying harvest maturity stages of ‘Nam Dokmai #4’ fruit, followed by the chlorophyll b content of the mesocarp and total soluble solids. Discrimination between immature and mature fruit additionally involved dry matter (DM), being constant as from 97 DAFB for mature fruit (18–19 g hg<sup>-1</sup>). Storage behavior of the ‘Nam Dokmai #4’ fruit lots suggested early picking in the season (97 DAFB) after confirmation of harvest maturity by defined levels of the crucial mesocarp attributes to minimize ripening during reefer transports. Completion of harvest maturity specification based on mesocarp characteristics by concomitant consideration of DAFB proved inevitable for proper application-oriented harvest time decisions.