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Utilisation-Orientated Harvest Time Decision: A Chance to Enhance the Marketability of Fresh Longan Fruits

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Abstract

For farmers in northern Thailand, fresh longan fruits (*Dimocarpus longan* Lour.) play a key role in income generation. However, due to their high perishability, the profit is often unsatisfactory, with sale being limited to local markets and some export within Asia. To avoid decay and browning, pre-treatments like sulphur fumigation are commonly used, but make the product less suitable for international markets. Farmers must consider sustainable fruit production and quality aspects to improve income security through enhanced marketability of fresh longans and access to more distant export markets.

Customers from different markets request diverse sensory qualities for dessert fruits, which differ from quality standards for fresh fruits at processing facilities. Required shelf-life is depending on distribution and storage times needed. Since postharvest ripening of non-climacteric fruit is impossible, the production of high-quality longans mainly depends on the selection of proper raw material and harvest time decision.

The aim of this study was to investigate the levels of utilisation-orientated quality and shelf-life that are achievable through proper physiological maturity without any further postharvest treatment.

Longan fruits cv. Daw were obtained during harvest season 2007 from a research orchard in northern Thailand. Five harvesting dates at regular intervals were chosen, covering the whole harvest period. The maturity-depending initial fruit quality was evaluated on each harvesting day for fruits of different size categories. For monitoring of shelf-life, all samples were stored for 21 days at 5 °C and 90 % RH. A broad range of outer and inner fruit quality parameters was regularly monitored, in addition to physiological and chemical indicators of senescence and decay. Irrespective of harvest maturity, high perishability became evident by rapid changes in peel properties, as observed after 3 days of storage. Further size-depending quality changes were noticed after 8 and 13 days, respectively. Different stages of fruit decay and senescence were detected for the longans of diverse maturity after 21 days. This information makes utilisation-orientated harvest time decision more reliable for farmers and serves as basis for the development of innovative concepts necessary for an appropriate postharvest handling of Sapindaceae fruits.

Keywords: Fruit quality, longan, picking maturity, postharvest, ripeness, shelf-life