

POSTHARVEST PROCEDURE FOR MALAYSIAN DURIAN TO CHINA BY AIR SHIPMENT

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Malaysia received authorization to export fresh durian to The Republic of China on June 19, 2024, necessitating a robust postharvest procedure to ensure product quality during transport. The Malaysian Agricultural Research and Development Institute (MARDI) developed a comprehensive postharvest procedure incorporating advanced packaging and pre-cooling techniques, followed by cold storage, to optimize the preservation of durians. This procedure utilizes low-density polyethylene (LDPE) packaging with a thickness of 0.04 mm to extend the fruit's storage life, and pre-cooling to mitigate the risk of quarantine pests. A simulation study was conducted to validate the efficacy of this method under controlled cold chain conditions (7-10°C). During sample preparation, one species of quarantine pest, *Planococcus minor*, was identified. Through the application of meticulous postharvest handling procedures, including airbrush cleaning and pre-cooling treatments, the pest mortality rate reached 100% within 12 hours. After 48 hours, the quality evaluation of the durian samples revealed no significant changes in colour, soluble solids content, or total titratable acidity compared to freshly harvested fruit, indicating that the durians remained in excellent condition. These results are pivotal for developing a standard operating procedure (SOP) for exporting fresh durian to China. The proposed handling and storage techniques ensure that Malaysian durians are safe, high-quality, and maintain their premium status throughout the export process.

Keywords: cold storage, fruit quality, pre-cooling, quarantine, simulation study