

Effects of packaging on fruit rot disease, quality, and browning of litchi fruits

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Abstract

The effects of packaging on fruit quality, browning, and rot development of 'Chakkaphat' litchi fruit were investigated. Harvested litchi fruits were cleaned with a solution of 100 ppm sodium hypochlorite at 10°C, then packed in nylon net bags (control), PET (Polyethylene terephthalate) trays covered with Active bags (Equilibrium Modified Atmosphere film), LDPE (Low-density polyethylene) bags, Clamshell boxes, or PET trays wrapped with PVC film. Packages were placed in export cartons and kept at 4°C for 28 days. PET trays covered with Active bags were the best packaging for delaying litchi postharvest disease incidence, disease severity, weight loss, browning of peel, peroxidase (POD) activity, and anthocyanin degradation, and also had the highest acceptance score in consumer evaluations. None of the tested packages affected ascorbic acid content, titratable acid, total soluble solids, respiration rate, total phenolic compounds, pH of peel, or the activities of polyphenyl oxidase (PPO) and phenylammonialyase (PAL) in fruit peel.