

**Title** Postharvest practices for managing the quality of longans and rambutans  
**Author** M.M. Wall, K.A. Nishijima, L.M. Keith and M.A. Nagao  
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### **Abstract**

Research was conducted to integrate preharvest disease control methods and postharvest practices to manage diseases, improve fruit quality, and extend the shelf-life of longans and rambutans exported from Hawaii. The main pathogens of longan and rambutans were isolated and identified as *Lasmenia*, *Colletotrichum*, *Pestalotiopsis* and *Phomopsis*. In vitro sensitivity of these pathogens to registered fungicides was established, and Serenade<sup>®</sup> (a patented strain of *Bacillus subtilis*) was 100% effective at all test concentrations. However, when Serenade<sup>®</sup> was applied as a preharvest field treatment, it did not control postharvest diseases or improve quality of rambutans or longans. In postharvest studies, optimum storage temperatures and packaging systems were established. Package treatments included microperforated bags, clamshell containers, Peakfresh<sup>®</sup> film, and Lifespan<sup>®</sup> film. For longans, the sensory quality was maintained, overall disease incidence minimized, and shelf-life extended when microperforated packages or clamshell containers were stored at 10°C. The modified atmospheres (15% CO<sub>2</sub> and 7% O<sub>2</sub>) inside Peakfresh<sup>®</sup> packages adversely affected longan flavor. Rambutans stored in the clamshell, microperforated bag, or Peakfresh<sup>®</sup> packages had higher visual quality ratings and lower disease incidences when stored at constant 10°C compared to simulated shipping temperatures. Rambutans held under simulated shipping temperatures in microperforated bags or clamshells had disease incidences that were 2-3 times higher than when stored at constant 10°C. Rambutans stored in Peakfresh<sup>®</sup> packages had the best overall quality ratings and lowest disease incidence, but lowest flavor ratings.