

Effects of Salicylic Acid Incorporated with Lukewarm Water Dips on the Quality and Bioactive Compounds of Rambutan Fruit (*Nephelium lappaceum* L.)

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ABSTRACT

This study investigated the quality attributes of rambutan cv. Rong-rien treated with salicylic acid (SA) solution and/or lukewarm water (LW). The fruit were dipped in distilled water (control), lukewarm water at 35°C, 1.0 mM salicylic acid solution, and 1.0 mM lukewarm salicylic acid solution (SA+LW) at 35°C for 20 min. The fruit were packed in polyethylene containers and then held at 13±2°C for 9 days. Visual appearance, weight loss, pulp firmness, external browning score, superficial colors, total soluble solids (TSS), total acidity (TA) and bioactive compounds – namely antioxidant capacity, total phenols, total flavonoids and total ascorbic acid contents – were determined. The weight loss of the fruit was small during storage and slightly delayed by salicylic acid or/and lukewarm water dips. SA and SA+LW dips delayed external browning and effectively inhibited the softening of the fruit. The reduction of lightness (L) was delayed by salicylic acid and/or lukewarm water dips. All treatments had no effect on superficial colors and taste of the fruit during storage. SA and SA+LW dips clearly enhanced bioactive compounds involving antioxidant capacity, total phenols, total flavonoids and total ascorbic acid content during storage. In conclusion, SA and SA+LW treatments delayed external browning, maintained pulp firmness and enhanced the bioactive compounds of rambutan during storage.*

Keywords: Rambutan, Salicylic acid, Lukewarm water, Bioactive compounds

INTRODUCTION

Rambutan (*Nephelium lappaceum*, L.) is an important exotic fruit indigenous to Southeast Asia, including Thailand, Malaysia and Indonesia (Lam and Kosiyachinda, 1987). Thailand is a major exporter of rambutan. 'Rong-rien' rambutan is the most popular commercial variety in Thailand, with demand increasing annually. As a non-climacteric fruit, rambutan must be harvested at the peak of maturity, because further ripening does not continue after harvest (O'Hare, 1995; Wall et