

Title Vapour treatments with methyl salicylate or methyl jasmonate alleviated chilling injury and enhanced antioxidant potential during postharvest storage of pomegranates

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Citation Food Chemistry, Volume 124, Issue 3, 1 February 2011, Pages 964–970

Keywords Punica granatum L.; Quality; Anthocyanins; Phenolics: Antioxidant activity

Abstract

Pomegranates were treated after harvest with methyl jasmonate (MeJa) or methyl salicylate (MeSa) at two concentrations (0.01 and 0.1 mM), and then stored under chilling temperature for 84 days. Control fruits exhibited chilling injury (CI) symptoms manifested by pitting and browning, the severity being enhanced as storage time advanced, and accompanied by softening and electrolyte leakage (EL). The CI symptoms were significantly reduced by MeJa or MeSa treatments, without significant differences among treatments or applied dose. In addition, both treatments significantly increased total phenolics and anthocyanins with respect to controls. Hydrophilic (H-TAA) and lipophilic (L-TAA) total antioxidant activity decreased in control arils, but in both MeJa and MeSa treated fruits H-TAA increased while no significant changes occurred for L-TAA. Results would suggest that both MeJa and MeSa have potential postharvest applications in reducing CI, maintaining quality and improving the health benefits of pomegranate fruit consumption by increasing the antioxidant capacity.