

Impact of carboxymethyl cellulose based edible coating on storage life and quality of guava fruit cv. 'Allahabad Safeda' under ambient storage conditions

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Abstract

Edible coatings form a semi-permeable membrane film which retards the ripening and senescence. In this sight an research was investigated to study the effects of different concentrations of carboxymethyl cellulose (CMC; 1.0, 1.5 and 2.0 g L⁻¹) on the storage life and quality of guava fruit cv. 'Allahabad Safeda' under ambient storage conditions (24 ± 1 °C and 65 ± 5% RH) for up to 12 days. Determination of weight loss, decay, firmness, sugars; soluble solids content (SSC), reducing sugars (RS) and total sugars (TS), titratable acidity, ascorbic acid content, total phenol content and sensory attributes was done. Fruit coated with CMC (1.5 g L⁻¹) significantly showed reduced weight loss (3.95%) and decay (8.33%) besides maintaining higher firmness (41.68 N), sugars (SSC, RS and TSS; 11.32%, 2.98% and 7.79% respectively), titratable acidity (0.40%), ascorbic acid content (216.11 mg 100 g⁻¹ pulp), total phenol content (113.90 mg 100 g⁻¹ pulp) and sensory attributes (7.81) compared with control. Overall, coating with CMC (1.5 g L⁻¹) significantly extended the storage life and maintained the fruit quality of guava cv. 'Allahabad Safeda' for up to 12 days under ambient storage conditions. Further investigations would explore knowledge among growers for successful post-harvest application of CMC to extend the storability and marketability of guava fruit cv. 'Allahabad Safeda' under ambient storage conditions.