

VOLATILE AND QUALITY CHANGES IN FRESH-CUT CANTALOUPE AND HONEYDEW MELONS STORED IN MODIFIED ATMOSPHERE PACKAGING

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Modified atmosphere packaging (MAP) in fresh-cut melons has been reported to keep the visual quality during storage, yet its effect upon aroma and firmness is cultivar-dependent. The main objective of this research effort was to compare the properties of fresh-cut, fast senescing Cantaloupe with fresh-cut, slow senescing Honeydew melons, regarding changes in quality and volatiles, when stored in passive MAP. Fresh-cut cubes of both Cantaloupe and Honeydew melons were accordingly packaged in polypropylene trays, over-wrapped with a microperforated film and stored for 14 days at 5 °C. Three replicate packages of each cultivar were assayed at day 0, 4, 7, 11 and 14 for color, firmness, soluble solid content (SSC), juice loss, respiration rate and volatile retention, and the experiment was repeated. Volatile compounds were extracted using a relatively recent technique (Stir Bar Sorptive Extraction) and quantified via GC-MS. Color and SSC remained constant throughout storage. During the first 4 days of storage, the Cantaloupe cubes softened at a higher rate (1.99 N.day⁻¹) than the Honeydew cubes (0.85 N.day⁻¹), but firmness remained relatively unchanged thereafter until the end of the storage period. Fresh-cut Cantaloupe cubes exhibited a higher respiration rate (17.49 - 63.82 mL.kg⁻¹.h⁻¹) than fresh-cut Honeydew cubes (7.72 - 55.45 mL.kg⁻¹.h⁻¹), throughout the entire storage period. Esters and aldehydes were the major volatile compounds present in the samples of both cultivars but Cantaloupe yielded higher concentrations of esters and aldehydes, and lower concentrations of alcohols than Honeydew. Esters increased their levels during storage, whereas alcohols and aldehydes decreased.

Keywords: *Cucumis melo*, firmness, minimally processed, quality