Minimal processing and application of 1-MCP in yellow pitahaya: an opportunity for export market

Laura Sofía Torres Valenzuela¹, Liliana Serna Cock², Alfredo Adolfo Ayala Aponte³, Isabel Cristina García Gutiérrez³

¹. Universidad del Valle Sede Caicedonia; Universidad La Gran Colombia Seccional Armenia - Colombia.
². Facultad de Ingeniería y Administración. Universidad Nacional de Colombia Sede Palmira, Palmira – Colombia.
³. Escuela de Ingeniería de Alimentos. Universidad del Valle, Cali – Colombia

Yellow pitahaya is an exotic fruit with increasing worldwide acceptance thanks to its pleasant taste and attractive shape and color. The application of 1-MCP prior to minimal processing, may be an alternative for preserving nutritional and organoleptic quality of fruits. 1-methylcyclopropene (1-MCP), an ethylene inhibitor, is used to extend the shelf-life and maintain the quality of plant products. 1-MCP reduces maturation by partially blocking ethylene receptors in plant cells, thus increasing available time for proper fruit storage. The objective of this study was to assess the effect of minimal processing (slicing and axial) and the application of 0, 300 and 400 μg.L⁻¹ of 1-MCP on the color change (∆E), soluble solids (SS), total sugars, total titratable acidity (TTA), vitamin C (ascorbic acid) and firmness of yellow pitaya fruits. The minimally processed pitahaya fruits were vacuum packaged. The results showed that application of 1-MCP did not affect the pH, SS, TTA, and changes reduced ascorbic acid, color and firmness, presentation affected all factors except vitamin C. Therefore the application of 300 μg.L⁻¹ of 1-MCP and minimal processing are an alternative to prolong the shelf life of yellow pitahaya, and constitute an opportunity for export market.