

Plant-based edible coating with antioxidant properties to improve the postharvest in fruit

Maria Dolores Lopez Belchi, Cisterna P, Navarrete F J, Munoz-Vega P, Bastias R M, Calderon-Orellana A, Jara-Zapata P and Romero M E

University of Concepcion, Chile

Losses of fruit quality are frequent during post-harvest mainly due to the fact that biological activities in fruits continue after harvest and lead to water loss, solutes and gaseous exchange through respiration and transpiration. This contributes significantly to have mass loss, fruit shrinkage, poor eating quality and short shelf life, which are the critical factors determining the competitiveness of the market. Application of coatings immediately after harvesting is a technique that has been successful for different reasons (decrease water loss, increase antimicrobial properties and delaying senescence). Among the different applications of coating, the edible coatings based on plant extracts are the latest trends proposed for conservation and improvement of production quality on horticultural. Maqui plant (*Aristotelia chilensis*), is a native purple-black berry distributed in Chile and Argentina. The fruit contain a rich variety of anthocyanins and their leaves are rich in polyphenols as well. The aim of this study was to develop a coating based on maqui leaf extracts and its evaluation on fruit nutritional and quality responses during the postharvest. To carry out this work, two of the main fruit that are exported from Chile were chosen, sweet cherry and blueberry. Different coatings were developed with alginate and combining alginate with maqui leaves extracts, and also with

ascorbic acid. Untreated fruit was set in the assay as control. The coated fruits were maintained at 2°C for 24 days. The firmness, total polyphenols, total anthocyanins and antioxidant activity was monitoring until the end of the assay. In the case of these fruits, the content of polyphenols, anthocyanins and firmness was always greater with the coating, standing out when the alginate contained extract of maqui leaves or ascorbic acid. These preliminary results are promising for the development of the plant-based coatings to be used in postharvest.

Biography

Maria Dolores Lopez Belchi has completed her PhD in Agricultural Chemistry at University of Murcia, Spain and Postdoctoral studies of formulation of functional ingredients from Nantes Atlantic College of Veterinary Medicine, Food Science and Engineering, France. She has worked as a Professor of Chemistry at University of Concepcion. She has published more than 30 papers in reputed journals and has been serving as a Director of Laboratory of Chemical Analysis in the Department of Plant Production. In recent years, she has worked in the study of active compounds extracted from berries or other vegetables and fruits with high impact on human health.

mlopezb@udec.cl