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Influence of different packaging systems on the quality of roasted chestnuts

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Chestnut fruits (*Catanea sativa mill.*) are widely consumed in various commercial forms, fresh or processed, and are more important in human nutrition for their nutritional qualities and bioactive compounds. Due to their water and sugar contents, chestnuts have a limited shelf-life, hence it is important to extend the shelf-life of both fresh and processed fruits. The present study evaluates the quality of packed roasted chestnuts in Modified Atmosphere Packaging (MAP), Semi-Permeable (SP) and Barrier (B) film with and without Aldomar® adsorbent material. Chestnuts were also stored under normal atmospheric conditions to control the efficiency of the above reported packaging conditions. Throughout the storage period (3 months at $4\pm 1^\circ\text{C}$), product weight loss, O_2/CO_2 concentrations in the package headspace, physico-chemical composition (colour, total sugars, starch content and composition, organic acids), rheological and antioxidant properties (polyphenols, antioxidant activity), as well as microbial quality were analyzed periodically. Significant differences in the investigated properties were observed during the storage in the various packaged systems. Chestnuts packaged in the semipermeable film showed a weight loss higher than the other systems (MAP, B). Differences in the microbial analyses, rheological properties and sensory evaluation were observed during the storage in SP trays respect to the others. Total sugars and starch content did not appear to be influenced by the different packaging, but the polyphenols content and antioxidant properties slightly changed during the storage with different packaging. The fruits appear to be marketable for up to 75 days of storage for SP film and for up to 90 days in MAP and B film.

Biography

Loredana Liguori has completed her PhD from University Mediterranea of Reggio Calabria in established consortium with University of Salerno, and Postdoctoral studies from University of Salerno. She has experience in food science and technology, especially in membrane processes for reducing alcohol content in beverages and improvement of taste and aroma. Other researches activities are shelf life extension of fruits and vegetables, improvement of stevia sensory characteristics, alternative methods for peeling of hazelnuts, ready to cook meat products in PET based nanocomposite films for microwave packaging applications. She has published 15 papers in reputed journals.

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