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Quality of freezed dried peach snacks: Scanning electron microscopy combined with image analysis techniques

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The causes of food waste or loss are numerous and occur at the stages of production, processing, retailing and consumption. Peaches must be processed quickly to maintain their quality because they are seasonal and their shelf life is short. An option to process and to maintain quality is to apply freeze drying methods. The aim of the present research was to evaluate quality parameters of freeze dried peach to increase peach shelf-life, consumption and to decrease waste of fruit. Peaches were ripped on maturity time and stored for 16 days, freeze dried and analyzed every 4th day (T1 (4 days), T2 (8 days), T3 (12 days), T4 (16 days) to establish quality among storage and process for peach snacks. Microstructure was carried out applying a Scanning Electron Microscopy. Texture and color parameters were analyzed by Image analysis techniques and physicochemical parameters by conventional analysis. Statistical differences ($P < 0.05$) were obtained for color, texture, water activity and porosity. Results revealed that after 12 days of storage/freeze drying peach snacks showed lower pore size with higher amounts of pore, which affected rehydration process leading to a harder sample. Color also was affected, decreases in lightness and increases in redness appeared. Optimal quality in peach snacks can be obtained at storage/freeze drying between 8-12 days. This research incorporates a quick approach to quality applying image analysis techniques and it will benefit to increase shelf-life and consumption of fat-free snack peaches and to decrease the effect of wasting fruit.

Biography

Valeria Messina received her Degree in pharmacy. She is a researcher at the Solid Research Center-Scientific and Technological Research Institute for Defense, UNIDEF (Strategic I & D or Defense)-CONICET-Ministry of Defense, Buenos Aires, Argentina. She is a Member of the National Council for Scientific and Technical Research.

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