EVALUATION OF THE CHEMICAL COMPOSITION OF FRESH AND FREEZE-DRIED POWDERED YACON

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Fructooligosaccharides (FOS) are known to have protective effects concerning the prevention and treatment of chronic diseases. Consumption of FOS enhances the growth of bifidobacteria in the colon which have health benefits. The Yacon (Smallanthus sonchifolius), is a plant originating from the Andes, which is recognized for its prebiotic potential due to its high concentration of FOS. Changes in the concentration of FOS occur during fresh roots storage, making it necessary to develop products which preserve their nutritional content and maintain their sensory characteristics. The aim of this study was to compare the nutritional content of freeze-dried powdered yacon (FDY) and fresh yacon, together with evaluating the changes within fresh roots during storage. The chemical composition of fresh yacon and FDY was determined, while the changes in fresh yacon during storage were monitored. The FDY and the fresh yacon contained (g per 100g) respectively: 4.7 and 0.6 of protein, 0.3 and 0.1 of lipids, 88.6 and 9.1 of carbohydrate, including 41.2% and 5.7% of FOS. After 22 days of storage, the fresh roots had deteriorated in appearance as they were withered and dried, and the FOS content decreased by 50%. The FOS content of FDY did not change. Compared to fresh yacon, the FDY maintained a greater content of FOS, which did not undergo any physical changes during storage. The use of FDY as a potential source of FOS is feasible, as processing does not affect its functional quality, leading to a final good quality product, well accepted by consumers.