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I International Conference on Research for Sustainable Development in Mountain Regions

Book of Abstracts

INSTITUTO POLITÉCNICO DE BRAGANÇA
Centro de Investigação de Montanha
Embrapa
United Nations Educational, Scientific and Cultural Organization
UNESCO Chair in Sustainable Mountain Development
University of the Highlands and Islands
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Sy08O05

Development of a natural preservative based on catechin and derivatives from plant origin.

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The controversy and ambiguity related with chemical additives, allied to the sporadic scares, have paved the way for natural additives to gain interest and funding. Today, most consumers prefer foods added with natural additives, which is seen by the food industry as an opportunity to find new and more efficient natural-based solutions. Polyphenols constitute some of the most interesting groups of natural compounds in the vegetable kingdom and due to their antioxidant capacity, they have been used to develop natural additives in the class of preservatives. They can be added as plant extracts, taking advantage of the synergistic effects between compounds, or as individual molecules. Catechin, a widely known flavon-3-ol, is also known for its antioxidant activity. The discovery of new alternative sources of natural additives is also a very important topic, therefore the aim of this study was to obtain an extract enriched in catechins (natural preservative), from fruits of Arbutus unedo L., as an alternative source to the already well studied *Camellia sinensis* (L.) Kuntze. However, the catechin stability during the extraction and storage processes requires essential conditions that need to be examined cautiously. Therefore, a stability study of the enriched catechin extract powder was performed, evaluating the main affecting conditions involved in the obtaining and storage of the extract and its stability in mimitized food matrices. To determine these effects three main variables (time, temperature and pH) affecting catechin function were considered, being the catechin content monitored by HPLC-DAD. Mechanistic and phenomenological equations were used to describe the responses and optimal conditions for catechin stability. Overall, with this study the best stability conditions for catechin enriched extracts were established (information protected by a submitted patent) in order to allow its use as a natural preserver by the food industry.

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