

OPTIMIZATION OF ULTRASOUND-ASSISTED EXTRACTION OF PHENOLIC COMPOUNDS FROM AVOCADO PEELS

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PO - (622) - OPTIMIZATION OF ULTRASOUND-ASSISTED EXTRACTION OF PHENOLIC COMPOUNDS FROM AVOCADO PEELS

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Body

Avocado (*Persea americana* Mill.), a fruit native to Central America and Mexico, is one of the most consumed fruits in the world, with a global production of approximately 6.3 million tonnes in 2018. Its industrial processing generates significant amounts of by-products, mainly peels, seeds, or exhausted pulp, which disposal causes important environmental and economic problems. Nevertheless, these by-products present a high content of bioactive molecules with many human health benefits, which could be used for the formulation of functional foods or cosmetic products (Del Castillo-Llamosas et al., 2021; Rodríguez-Martínez et al., 2021). One of the important challenges for the recovery of added-value molecules from agro-industrial wastes is the selection of extraction technologies leading to high extraction efficiency and helping to preserve the quality of the recovered molecules. In this framework, ultrasound-assisted extraction (UAE) has been considered a green technology for the isolation of bioactive compounds from several natural sources.

The purpose of the present study was to optimize the extraction of antioxidants from avocado peel (AP) using ultrasounds. The influence of ethanol/water ratio and time was evaluated using response Surface methodology (RSM).

Under selected operational conditions (38.46% ethanol and 44.06 min), the response values were 45.34 mg GAE/g dried AP and 87.56 mg RE/g dried AP for TPC and TFC, respectively, with antioxidant levels of 73.25, 160.34 and 44.65 mg TE/g dried AP as determined by the DPPH, ABTS and FRAP methods, respectively.

In addition, the optimized extracts were chemically characterized by HPLC-ESI-MS and FTIR. The main phenolic compounds found in the avocado peel extract were phenolic acids, such as hydroxybenzoic and hydroxycinnamic acids.

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Palavras-chave : Avocado peel, Bioactive compounds, Phenolic compounds, Ultrasounds extraction