



ULTRASOUND ASSISTED EXTRACTION OF POLYPHENOLS WITH HIGH ANTIOXIDANT ACTIVITY FROM OLIVE POMACE (*Olea europaea* L.)

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ABSTRACT

Olive pomace is an industrial by-product resulted from the olive oil production process. This study was carried out to optimize the extraction of polyphenols with high antioxidant activity from olive pomace using different techniques. The extraction was performed using homogenization and ultrasonic techniques at different solvent/pomace ratios till polyphenols reached a plateau. Total phenolic content was determined with the Folin-Ciocolteau method. Extracts were analyzed by HPLC for polyphenol and flavonoid contents. Scavenging activity of the extracts was determined against 1,1-diphenyl-2-picryl-hydrazyl and hydrogen peroxide radicals. The highest yield of the polyphenols (86.13 ± 0.80 mg gallic acid equivalents/g dried defatted pomace) was recorded after 30 min of extraction using ultrasonic technique and 40/1 methanol (80%)/pomace (v/w) ratio. Extracts obtained by the methanol/sample ratio of 20/1 and high ultrasonic intensity for 7 min possessed higher antioxidant activity than the synthetic antioxidant, butylated hydroxytoluene.

Keywords:

Antioxidant activity;

Olive pomace;

Polyphenols;

Ultrasound-assisted extraction