Polyphenols recovering from olive oil residue

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A variety of phenolic compounds have been identified in *Olea europaea*. Among them, oleuropein and hydroxytyrosol have been intensively studied for their potential effect on human health.

This study was undertaken to determine the phenolic composition and the antioxidant activity of extracts recovering from olive oil residue, *alperujo*, using different extraction conditions.

Extraction methods consisted basically of *alperujo* incubation with solvents at pH 2 for two hours by continuous stirring at indicated temperatures.

1 - Ethanol, room temperature

2 - Ethanol, reflux

3 - Water, reflux

Extracts were analyzed with regard to total polyphenol contents, phenolic profiles and antioxidant activities by Folin-Ciocalteu assay, capillary zone electrophoresis (CZE) and scavenging of the 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical, respectively.

Only hydroxytyrosol was recovered using water as extraction solvent; whereas both hydroxytyrosol and oleuropein in comparable amounts were recovered using ethanol, where the temperature increased the extraction yield.

The antioxidant activity, referred to hydroxytyrosol content, was higher in the aqueous extract than the ethanol extract, but comparable between ethanol extracts recovering at different temperatures. Other compounds unidentified by CZE can be contributed to the aqueous extract antioxidant activity.

These results demonstrate the interest of *alperujo* as a natural, inexpensive and concentrated source of high-added-value polyphenols.