

Abstract

This work evaluates the efficiency of olive (*Olea europaea*) oil (OO) as extraction solvent (referred to here as lipophilic extraction) for reducing power (RP) determination of 56 plant materials belonging to three plant product groups: medicinal plant leaves, fruit peels and green vegetable pulps. In addition, the sample which exhibited the greatest lipophilic RP (RP_{lip}) value in each studied group was characterized in terms of (1) RP_{aq} in the case of an aqueous extraction, (2) Pearson's correlation coefficient (r) between RP values and color parameters of CIELab system, in the case of both lipophilic and aqueous extraction, and (3) diphenylpicrylhydrazyl (DPPH) radical scavenging activity (RSA) in the case of both lipophilic and aqueous extraction. Among all investigated plant products, the wormwood (*Artemisia absinthium*) leaves showed the highest RP_{lip} (~ 70 mg BHT equivalents(eq.) $\times g^{-1}$ dry weight (dw)), while among fruits and green vegetables, the arbutus-berries (*Arbutus unedo*) peel (~ 53 mg BHT eq. $\times g^{-1}$ wet weight (ww)) and eggplant (*Solanum melongena*) pulp (30 mg BHT eq. $\times g^{-1}$, ww) gave the best results, respectively. Nevertheless, RP_{lip} negative values were obtained in numerous investigated samples. Regarding the additional characterization, any significant correlation was found between RP_{lip} and color parameters, whereas a significant perfect positive correlation ($p \leq 0.05$, $r \sim 1$) was found between RP_{aq} and certain color parameters in the case of arbutus-berries and eggplant. Furthermore, the RSA results confirmed the predominance of wormwood lipophilic extract in terms of antioxidant potential. Considering the applied lipidic extraction procedure, the resulting data reflect the antioxidant potential of OO-based plant infusions.