

Phenolic content and antioxidant activity of olive by-products and antioxidant film containing olive leaf extract

Authors

M Moudache, M Colon, C Nerín, F Zaidi

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Description

The antioxidant activity of olive leaf (OL) and cake (OC) extracts with different solvents was evaluated. 70% of aqueous ethanol extract of OL was chosen as the most antioxidant extract based on antiradical activity (DPPH) ($95.4 \pm 0.3\%$) and oxygen radical absorbance capacity (ORAC) (0.82 ± 0.07 g equivalent Trolox per g of solution) assays. This OL extract was incorporated in two multilayer materials consisting of (i) polyethylene/polyethylene (PE/PE) film and (ii) polyethylene/paper (PE/P). These multilayers were exposed to a gas stream enriched in free radicals to evaluate the scavenging capacity of both materials. PE/PE film exhibited the highest scavenging activity of free radicals (78.8%). Migration of the phenolic compounds from olive by-products into two simulants was performed and demonstrated a non-migrating behavior. The limits of detection and quantification for oleuropein were $0.5 \mu\text{g kg}^{-1}$ and $1.7 \mu\text{g ...}$