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NOVEL ANTIOXIDANT AND FIBRE-RICH FOOD INGREDIENTS FROM QUINCE PEEL

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Quince (*Cydonia oblonga* Mill.) is a sour and astringent fruit usually processed into various food products, such as jam, jelly, and quince pudding, or marmalade. Although the peel is often discarded as a by-product during the processing steps, it has been reported as a valuable source of bioactive phytoconstituents [1-3]. Therefore, this work was carried out to characterize the quince peel composition in phenolic compounds and dietary fiber, and to evaluate its antioxidant activity. The dry peel powder was subjected to extractions by hydroethanolic maceration (HM) and hot water (HW). The obtained extracts were characterized for their phenolic composition by HPLC-DAD-ESI/MS^n [4] and their antioxidant activity was evaluated *in vitro* by their ability to inhibit the oxidative hemolysis and the formation of thiobarbituric acid reactive substances (TBARS) using sheep erythrocytes and porcine brain cells, respectively [4]. The fiber content in the solid residues from the extractions was determined by an enzymatic-gravimetric method [5]. The analysis allowed to identify of 16 phenolic compounds, including caffeoylquinic acids, flavan-3-ols, and flavonol glycosides. Flavan-3-ols accounted for about 57% and 48% of the total phenolic fraction of the HM and HW extracts, respectively. The HM extract showed greater antioxidant activity than the HW extract in both *in vitro* assays, a result that strongly correlated with the higher content of flavan-3-ols. In turn, both extraction residues revealed fiber contents that reached nearly 37 g/100 g. Overall, this study demonstrated that it is possible to obtain antioxidant phenolic extracts and novel fiber-rich ingredients from quince peel, which could be used in food and beverage formulation. Future work is planned to optimize the extraction processes and assess their effectiveness as natural food preservatives and fortifiers.

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