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# OLIVE LEAF EXTRACTS AS NATURAL PRESERVATIVES IN FOODS: NUTRITIONAL, CHEMICAL AND PHYSICAL ANALYSIS IN QUARK CHEESE

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The olive tree (*Olea europaea* L.) is a typical species from the Mediterranean region, where it has great economic and social influence, mainly due to the production of olives and olive oil. However, the leaves are by-products usually left aside during processing. These leaves could be valuable sources of phenolic compounds that exhibit bioactivity, for instance antioxidant, antimicrobial, anti-inflammatory activities, among others. These bioactive characteristics turn them into alternatives for application in the food industry as natural preservative additives. The tendency to substitute synthetic additives for natural ones has been growing, driven by consumer demands for healthier and more sustainable products. Thus, this work aimed at using extracts of olive leaves as preservatives in quark cheese and to evaluate the nutritional, chemical and physical influences over 7 days. The extracts were obtained applying two different extraction techniques, namely maceration and ultrasound assisted extraction, with subsequent incorporation in two different batches of quark cheese. Nutritional profiling was performed according to the official AOAC methods, as well as texture, colour, sugars, organic and fatty acids that were also analysed. The results showed that the consistency of the cheese increased with time and the maceration extract decreased the L\* (lightness) of the quark external colour. The nutritional profile and the lactic acid content were not influenced, which was expected. Malic acid appeared only in the cheeses with the natural extracts. The extracts helped preserve monounsaturated fatty acids, as well as polyunsaturated ones. In conclusion, the olive leaf extracts showed potential for application as a natural preservative, but further research with a longer shelf life is needed for more robust results for Industrial application.

**Keywords:** olive leaves, quark cheese, bioactive compounds, shelf, life, natural preserving additives

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