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The Role of Olives and Olive By-Products in the Mediterranean Diet: Innovative and Functional Food Development Strategies

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Abstract

The Mediterranean diet is widely recognized as a sustainable dietary model characterized by a high content of monounsaturated fatty acids and antioxidant-rich foods, particularly fruits, vegetables, whole grains, legumes, and olive oil. Among these, olives and olive-derived products represent a key component, providing bioactive compounds such as oleic acid, hydroxytyrosol, and oleuropein. In addition to their nutritional value, olive processing generates substantial amounts of by-products, including leaves and pomace, which remain rich in these bioactive constituents. Valorization of olive and its by-products through their incorporation into different food matrices offers a promising strategy for both enhancing the nutritional quality of foods and reducing agro-industrial waste. In this study, the incorporation of olive-derived ingredients into various food systems was investigated, with a focus on their effects on nutritional composition, bioaccessibility, and sensory properties. Representative applications, including bakery products, snacks, and dairy-based formulations, are presented to demonstrate their technological feasibility and product quality attributes. Overall, this approach supports the development of innovative functional foods aligned with the principles of sustainability and the Mediterranean diet.

Keywords: Mediterranean diet, olives, functional foods, polyphenols, food by-products

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