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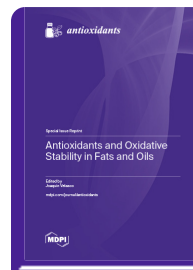
Special Issue Reprint

Antioxidants and Oxidative Stability in Fats and Oils

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This Special Issue addresses the critical issue of oxidative degradation in food systems, particularly as polyunsaturated lipids are increasingly incorporated into foods. It explores the chemistry, functionality, and innovation related to phenolic antioxidants and lipid stabilization strategies. Initial articles investigate the behavior of antioxidants like α -tocopherol and Trolox in complex environments, revealing how polarity and molecular context affect their efficacy. Mechanistic analyses highlight how phenolic structure influences antioxidant efficacy, guiding the design of advanced antioxidants.

It also examines oxidative stability in edible oils, such as black cumin, virgin olive, and Acer truncatum seed oils, emphasizing the impact of molecular composition, herb flavoring, and herb extracts like carnosic acid. Further articles focus on multiphasic systems, reviewing antioxidant partitioning theory and demonstrating the effectiveness of antioxidants concentrated at the interface. Finally, the antioxidant properties of bio-polymer films enriched with green carbon dots derived from apple pomace and rosemary are demonstrated.



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