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Abstracts Book

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APPLICATIONS

17th World Congress on Polyphenols Applications

September 19 – 20, 2024

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Welcome to Polyphenols Applications 2024

Dear Colleagues,

It is a great pleasure to welcome all of you to our 17th World Congress on Polyphenols Applications, which will be held on September 19-20, 2024, at Università degli Studi di Milano Statale, Milan, Italy.

Polyphenols Applications 2024 aims to bring together experts from academia and industry to discuss the latest scientific advancements in fundamental and applied research on polyphenols. This year the conference will feature a balanced mix of invited talks and short talks, based on suggestions from the audience at the previous year's conference.

The conference will cover various topics, including the latest advancements in polyphenol research, focusing on their health benefits, interactions with microbiota, and applications in food processing. Sessions will cover diverse topics, including the potential of anthocyanin-rich extracts in chemotherapy, the antiviral activity of polyphenols, and their impact on obesity and diabetes.

We would like to thank all the speakers and scientific committee members of Polyphenols Applications for their excellent contributions.

We also wish to thank the Local Organizing Committee: Sabrina Dallavalle, Andrea Pinto, Cristian Del Bo', and Daniela Martini from the University of Milan.

Finally, we are grateful for the support of our sponsor HealthTech Bioactives (HTBA).

We hope that you will enjoy the Polyphenols Applications 2024 Congress and that your interactions with colleagues from many countries will stimulate a creative exchange of ideas and challenges.

Prof. Jan Frederik Stevens
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NATURAL DEEP EUTECTIC SOLVENTS EXTRACTION OF VALUABLE BIOACTIVE COMPOUNDS – SUCCESSFUL METHOD FOR VALORIZATION OF BLACK RASPBERRY (RUBUS OCCIDENTALIS L.) POMACE

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Introduction: Industrial processing of black raspberry cause the significant generation of waste, leading to severe environmental and socioeconomic challenges. Possible solution lays in the re-utilization of this biomaterial rich with health-promoting bioactive compounds, where rutin and ellagic acid occupy noteworthy interest due to their antioxidant and anti-inflammatory potential. Thus, this study aimed to examine the effect of natural deep eutectic solvents (NaDES) on the recovery of rutin and ellagic acid from waste material – black raspberry fruit pomace.

Material & Methods: Thirteen different NaDESs, containing choline chloride or betaine as a hydrogen bond donor, and organic acids, polyols, amide, or sugars as hydrogen bond acceptor, were used for the ultrasound-assisted extraction of rutin and ellagic acid from black raspberry pomace, and compared with conventional solvents.

Results: Obtaining the amount of 840.19 µg/g of rutin, and 516.72 µg/g of ellagic acid, the mixture composed of choline chloride and 1,2-propanediol proved to be the most efficient extraction agent among NaDESs, achieving a similar bioactive compounds' content compared with 70% ethanol, and significantly higher in comparison to pure water.

Conclusion: These results emphasize the potential of NaDES-based extraction as a promising and sustainable practice for the valorization of black raspberry pomace.

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