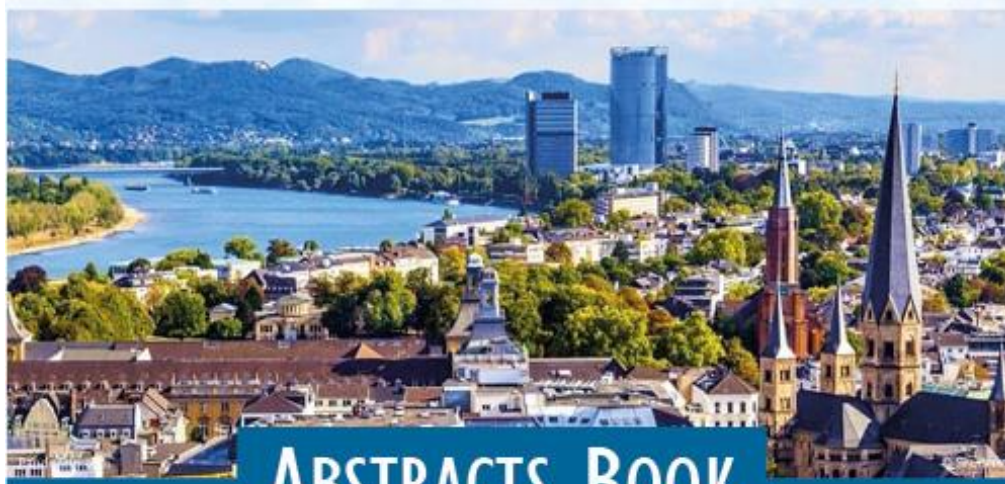


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ABSTRACTS BOOK

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ANTIOXIDANT AND ANTIHYPERGLYCAEMIC ACTIVITY OF FIVE *VACCINIUM* SPP. BERRY POMACE EXTRACTS

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Introduction: Berry pomace is considered as a waste product or used inefficiently mainly due to a lack of valorisation of their processing methods. However, berry pomace contains high amounts of valuable phytochemicals – polyphenolics, lipids, vitamins and others, which support converting of berry pomace into high value products prospective for treatment or prevention of chronic diseases (1).

Materials and Methods: Valorisation of berry pomace was studied using Response Surface Methodology (RSM) to optimise solvent composition used for extraction of polyphenols. Antioxidant effects of chemically well-characterised extracts of bilberry, blueberry, cranberry, American cranberry and lingonberry pomace were studied by total antioxidant capacity, DPPH radical scavenging, superoxide anion decrease assays and in oxidative stress model in human hepatic cell line HepG2. Anti-hyperglycaemic effects of the extracts were assessed as inhibition of α -amylase and α -glucosidase activity.

Results: Solvent composition used for polyphenolic extraction was optimised. Berry pomace extracts showed strong antioxidant activity and efficacy to inhibit activities of enzymes involved in carbohydrate digestion and to protect hepatic cells from tert-Butyl hydroperoxide caused oxidative damage at non-toxic concentrations.

Conclusion: Our results support use of berry pomace extracts for design of standardized formulation which in the future could be used for the prevention of chronic diseases associated with oxidative stress.

Hepatoprotective and antidiabetic activity of the extracts might be justified by the presence of active polyphenols or their potential synergistic effect.

Reference:

1. Klavins, L., Kviesis, J., Nakurte, I., Klavins, M. (2018). Berry press residues as a valuable source of polyphenolics: Extraction optimisation and analysis. *LWT - Food Science and Technology*, 93, 583-591. doi: 10.1016/j.lwt.2018.04.021