11th Central European Congress on Food and Nutrition

CEFood Congress Book

"Food, technology and nutrition for healthy people in a healthy environment"

Editors:
Peter Raspor, Irena Vovk, Andrej Ovca, Sonja Smole Možina, Bojan Butinar, Mojca Jevšnik

Ljubljana, 2022

11th Central European Congress on Food and Nutrition
"Food, technology and nutrition for healthy people in a healthy environment"

EDITORS:
Peter Raspor, Irena Vovk, Andrej Ovca, Sonja Smole Možina, Bojan Butinar, Mojca Jevšnik

PREPARATION OF TEXTS:
Andrej Ovca, Sonja Smole Možina, Irena Vovk

PREPARATION OF THE COVER:
Grafika Gracer d.o.o., Celje

Published: *European Declaration on Food, Technology and Nutrition Network,* Ljubljana, 2022
300 copies
Print: Grafika Gracer d.o.o., Celje

Location of digital print:
http://eftndeclaration.aaeuropae.org/Events/

CIP - Kataložni zapis o publikaciji
Narodna in univerzitetna knjižnica, Ljubljana

613.2(082)
663/664(082)

CENTRAL European Congress on Food and Nutrition (11 ; 2022 ; Ljubljana)
11th Central European Congress on Food and Nutrition : Food, technology and nutrition for healthy people in a healthy environment : CEFood Congress Book: Ljubljana, 2022 / editors Peter Raspor ... [et al.]. - Ljubljana : European Declaration on Food, Technology and Nutrition Network, 2022

ISBN 978-961-95942-0-9
COBISS.SI-ID 122200835

Congress president

Peter Raspor, Slovenia

International Scientific Committee

The Program and Organizing committee and Advisory committee constitute International Scientific Committee of CEFood 2022 and are entitled for activities as specified in committee's tasks.

Program and Organizing Committee

Peter Raspor, Slovenia
Irena Vovk, Slovenia, Vice president
Andrej Ovca, Slovenia, Vice president
Mojca Jevšnik, Slovenia
Sonja Smole Možina, Slovenia
Bojan Butinar, Slovenia
Primož Treven, Slovenia
Bety Breznik, Slovenia
Igor Pravst, Slovenia
Aleksander Bohinc, Slovenia
Vladimir Mrša, Croatia
Lea-Marija Colarič-Jakše, Slovenia
Evgen Benedik, Slovenia
Tjaša Vidrih, Slovenia

The Program and Organizing committee (POC) is composed of individuals and legal entities who understand and practice their responsibility for constituting program the organization and conducting the congress as follows:

Each member of the POC participate voluntarily and to the best of its' own ability to achieve good team spirit and organize high-quality event.

Each member of the POC will opening her/his unique capabilities for common mission adding to the mission comparable effort with all members of the team.

Each member of the POC is responsible for the representation and promotion of the congress mission in its' own professional environment.

The POC is responsible for all organizing aspects of the CEFood2022, such as: financial management, logistics, scientific program, abstract management, sponsorship and exhibitor management, communications, marketing and onsite management at the conference;

The POC is responsible for developing a well-balanced, high-quality scientific program together with Advisory Committee to be presented at the

P-17

EFFECTS OF ULTRASOUND AND HYDROTHERMAL TREATMENT ON DIGESTIBLE AND BIOACTIVE PROPERTIES OF WHOLEGRAIN WHEAT FLOURS WITH DIFFERENT AMYLOSE CONTENT

Valentina Nikolić[1], Marijana Simić[1], Vesna Kandić[1], Primož Titan[2], Dejan Dodig[1], Slađana Žilić[1]

[1]Maize Research Institute, Slobodana Bajića 1, 11185 Belgrade - Zemun, Serbia

[2]Research Genetics and Agrochemistry Ltd., Krog, Brodarska 27, 9000 Murska Sobota, Slovenia

valentinas@mrizp.rs

The consumption of wholegrain flours contributes to an increased intake of dietary fibers and phenolic compounds beneficial to human health. However, there are some downsides to wholegrain flours, such as poor baking performance and lower technological quality. The application of ultrasound and hydrothermal treatments may provide new possibilities for the modification and improvement of the baking- and bio-functionality of flours as well as the quality of baked goods [1]. Furthermore, waxy and high-amylose wheat varieties are considered novel raw materials due to their unique properties in bread making, such as improved bread texture and increased dietary fiber content [2]. The main focus of this study was to investigate the changes in enzymatic *in vitro* dry matter digestibility, antioxidant capacity, and the content of total free phenolic compounds before and after the individual treatments of the whole-wheat flours with different amylose content. Hydrothermal treatment positively influenced the digestibility of the whole-wheat flours, especially in waxy genotypes compared to high amylose ones, which can be explained by the formation of resistant starch. Ultrasound positively affected the total free phenolic compounds content. Moreover, the hydrothermal treatment had an overall negative effect on the antioxidant capacity. The amylose content was in high negative correlation with digestibility after hydrothermal treatment. Starch content was negatively correlated with digestibility after ultrasound treatment. Protein content was very strongly correlated to digestibility after ultrasound treatment. These findings can provide valuable guidelines in the formulation of new wholegrain wheat foods.

Acknowledgments

This study was supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia (Grant No. 451-03-9/2021-14/200040).

References

[1] T. Dapčević-Hadnađev, J. Tomić, D. Škrobot, B. Šarić, M. Hadnađev, Discover Food, 2, 11 (2022) 1-14.

[2] V. Nikolić, M. Simić, V. Kandić, M. Dodevska, P. Titan, D. Dodig, S. Žilić, Journal of Food Processing and Preservation, (2021), e15805.