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BOOK OF ABSTRACTS

International Summer School

FOOD SAFETY AND HEALTHY LIVING

FSHL – 2021

ONLINE

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July 4-8, 2021
Romania

TRANSILVANIA University Press
ISBN 978-606-19-1374-9

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Book editing – Mihaela Badea, Elena Vasilica, Laura Gaman

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C13 ANCIENT AND MODERN CEREALS AND THEIR SAFETY FOR CELIAC CONSUMERS

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Cereals are part of the diet all over the world. Among cereals, wheat provides up to 50% of the caloric intake in both industrialized and developing countries, representing one of the world's primary sources of energy. Wheat, barley and rye present the highest content of gluten-like proteins. Gluten is a protein complex that plays an important role in the technological properties of cereal-based products. However, it is involved in different disease called gluten-related disorders (GRDs). Among GRDs celiac disease is the best-known clinical form with a chronic course.

Although the gluten-free products have increased significantly in quality and quantity over the last few years, research still focuses on the identification of new ingredients to improve the nutritional, sensorial and functional qualities of foods available for celiac consumers.

Interest in the consumption of ancient grains has recently increased in general population. In addition, it has been observed that there is a wide variability between ancient and modern grains, in terms of toxicity for celiac people. Contradictory results have been observed for oat in term of safety for celiac patients. In this contest, it is important to clarify the role of minor cereals (such as oat) and ancient grains in the diets of celiac patients. Although some wheat-ancient grains, such as *Triticum monococcum*, *Triticum aestivum* ssp. *spelta* and Kamut®, showed a reduced in vitro toxicity, to date, these grains are still considered toxic for celiac patients. On the other hands, according to in vivo studies, selected oat varieties could be tolerated by celiac patients. The presence of contradictory results highlights the importance of studying the safety of “unusual” cereals in more detail, in order to prevent adverse effects in celiac patients.

Acknowledgments: This work was supported by Fondazione Celiachia Onlus (FC) Grant n°004_FC_2019.