

4th International Conference and Exhibition on

Food Processing & Technology

August 10-12, 2015 London, UK



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Cereal dietary fibre perspectives on sustainable food and nutrition

Over the last decades substantial attention has been given to the role of dietary fibre (DF) and its fractions-soluble (SF) and insoluble (ISF) fibre in nutrition and health. Cereals are among the major food sources of dietary fibre in the human diet. It was shown that primarily insoluble cereal DF and whole grains has positive influence on health improving from various aspects. The recommendation of a high dietary fibre intake has lead to developments in the food industry of fibre rich foods. Organic farming as a part of an extensive food supply chain includes also food processing, retailing and health claims so the interest for this food is increasing in the EU and world. The aim of the research presented here was to determine the SF, ISF and Total DF in different cereals (wheat, rye, barley, oat and millet) as well as their gross composition in order the influence of the cereal kind and farming method-organic versus conventional to be found on their values. Standardized enzymatic-gravimetric method-the Megazyme Total Dietary Fiber Kit was used in the analyses of TDF, SF and ISF of cereal samples. Among the all investigated cereals which were grown by the both organic and conventional farming, organically grown oat has shown maximal average values (% db) of TDF (42.0+/-1.39) and of ISF (39.22+/-0.58). The maximal average value (% db) of SF (6.85+/-3.85) has shown organically grown barley. With conventionally grown wheat was observed minimal average value of TDF (% db) of 13.28 +/- 0.72 while the minimal average values (% db) of ISF (8.06+/-8.13) and of SF (0.43+/-0.39) were observed with conventionally grown millet. In conclusion it can be said that in regards to TDF, ISF and SF, besides the cereal kind, the farming type has also influence on their values. Comparing the organic farming with conventional one, the organically grown cereals, primarily oat and barley have a good perspective in cereal processing and technology, food market and nutrition satisfying the consumer demands and nutritional recommendations towards better health.

Biography

Mirjana Menkovska is full Professor at the Department of Food Technology and Biotechnology at the Institute of Animal Science, Sts. Cyril and Methodius University in Skopje, Macedonia. She graduated at the Faculty of Technology and Metallurgy in Skopje in 1976; she took MS Degree in Instrumental Analysis at the same University in 1982, and PhD degree in Food Technology at the University of Belgrade, Serbia in 1993. She was research visiting scientist at many known research centers in the world such as Grain Marketing research Center in Manhattan, Kansas, USA and Cereal Research Institute in Detmold, Germany and other. She published more than hundred thirty papers in domestic and foreign scientific journals; and participated at more than sixty scientific meetings in the country and abroad. She was leader of many domestic and international scientific projects. She is author of a scientific book and she has translated three books from English into Macedonian language, and has reviewed two books. She is senator at the University Senate of the University in Skopje and was its Rector candidate in 2012. Her field of expertise is food technology-cereal science and technology, food processing and new products developing, functional food, quality and safety of food and feed and food instrumental analysis. She was awarded for scientific book in 2004 and got Recognition for contribution to the Eu/ICC Cereal Conference 2002 "ECC 2002-ERA". She was for a long time member of AACC, RACI and ICC National Delegate, as well as of many other world scientific associations and member of many Scientific and Organizing Committees at international and domestic scientific conferences.

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