International Conference on
ENVIRONMENTAL MICROBIOLOGY & MICROBIAL ECOLOGY
&
International Conference on
ECOLOGY, ECOSYSTEMS & CONSERVATION BIOLOGY
July 11-12, 2018 | Toronto, Canada

Nadiya Boyko

Uzhhorod National University, Ukraine

Microbiome of soil, plants and humans, the ways and mechanisms of their interrelation, role in P4 and IT- medicine

Statement of the Problem: The fact that our host changes are more likely occur due to the modification of gene expression, rather than the alteration of the genetic code itself reverse/refresh our vision, and finally led to prognostic personified and preventive medicine and sustainable agriculture consistent with cyclic bioeconomy.

Methodology & Theoretical Orientation: *In vitro* and *in vivo* models, *in situ* monitoring, limited clinical trials, mathematical modeling, GIS.

Findings: Contaminants spread in targeted 16 EU/Ukrainian trans-border regions and their interplay with soil, water, air microbiome and plant/animal health had been investigated. Regional specificities and peculiarities, regularities and trends between chemical composition, biochemical and biological (microbiological) properties of soils (soil microbiome) and health of edible plants, crops' productivity, and nutritional value were defined. The prevalence of infectious and non-infectious diseases in connection with the ecological status of the regions was examined. Quantitative and qualitative microbiological characteristics were obtained for all the prioritized traditional foods originated from Black Sea region' countries within BaSeFood project, and new national and regional food compositions databases were created. The influence of biologically active compounds (BAC) of edible plants, the major ingredients of the traditional foods, as well as a number of beneficial microorganisms isolated from various sources on the human host was investigated. The pro- or anti-inflammatory effects were detected and the mechanisms of its influence on host immunity and microbiome have been studied. Correlated biomarkers for earlier detection of metabolic diseases were identified. The efficacy of individually selected foods rich with BAC to treat and prevent DT-2 had been proved in a limited clinical trial. GIS systems were created and currently applied for regional nature conservation.

Conclusion & Significance: Connected databases and unique IT instruments for personal nutrition calculation and healthy food manufacturing by local food producers are in focus.

Biography

Nadiya Boyko has defended her PhD in 1994 and doctoral degree in 2010. From 2000 until 2005 she occupied sabbatical Research Fellow position in Laboratory of Mucosal Immunology in University of Pennsylvania, USA. She is permanently working as a professor at the Uzhhorod National University and occupied following positions: Director of the R&D Centre of Molecular Microbiology and Mucosal Immunology; Vice-President and CSO of CLS in Slovakia and co-founder and CEO of Ediens LLC. Research interests are P4 medicine, personalized nutrition, pharmabiotics, human microbiome, noncommunicable diseases; food safety, knowledge transfer. Co-establisher of Ukrainian and Slovak Technology Platforms "Agro-Food"; experienced stakeholder manager with links to industry, academia, and researchers in Europe. She has published more than 250 papers, including a chapter in Mucosal immunology Elsevier press, h-index is 10.

nadiya.boyko@uzhnu.edu.ua