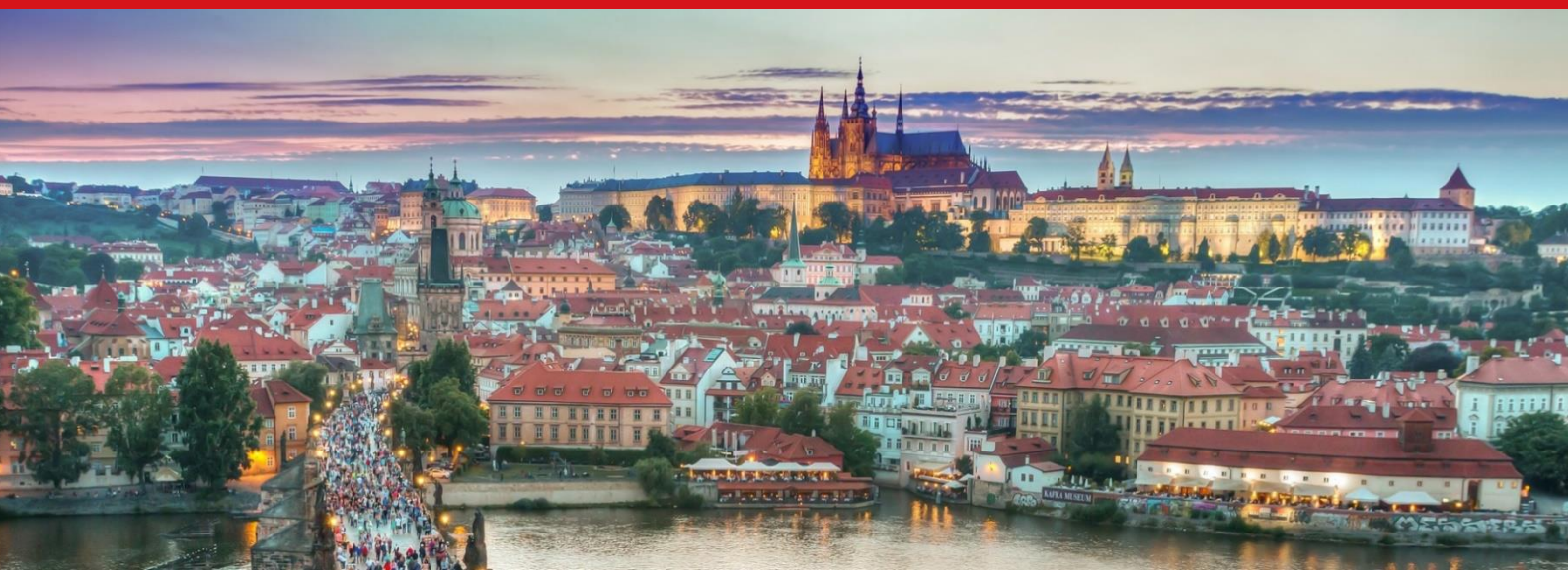
BOOK OF ABSTRACTS

CORRECTED VERSION

5th IMEKO FOODS

Metrology for Sustainable Food Production

16-18 SEPTEMBER 2020 | PRAGUE | CZECH REPUBLIC



Czech University of Life Sciences Prague

TERPENIX RESEARCH & ANALYTICS

5th international conference on metrology in food and nutrition

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2nd version

5TH INTERNATIONAL CONFERENCE ON METROLOGY IN FOOD AND NUTRITION

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Oral presentations

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Joint Research Unit – METROFOOD-MK and its Contribution to Food Safety and Quality

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AIM

The North Macedonian Node within the European Research Infrastructure METOFOOD-RI consist of two institutions: Institute of Public Health (IJZRSM) and Faculty of Agricultural Sciences and Food (FASF), named as Joint Research Unit – METROFOOD-MK. The node's laboratories are equipped with: gas chromatography systems with different type of detectors: MS, NPD, ECD, FID; liquid chromatography systems with different type of detectors: DAD, UV, RI than, Graphite Furnace Atomic Absorption Spectroscopy, Flame Atomic Absorption Spectroscopy system, Cold vapor (flow injection mercury system). Within the METROFOOD-PP activities, it is defined what services METROFOOD-MK Node will provided in characterization of RMs and food safety&quality analysis. For the food safety the following parameters are selected: inorganic contaminants (trace elements), organic contaminants (pesticides and mycotoxins), allergens, additives, and microbiological parameters.

As the most important parameter in estimating food quality is determination of food composition in terms of content of proteins, fat, fatty acids, carbohydrates, fibers (total, crude), vitamins, micro- and microelements and providing information about nutritional values, physico-chemical analysis, bioactive compounds and adulteration. Determination of nutritional value is important as consumers could be informed which nutrients are present in the certain food and how much energy they provide. General food labelling is governed by Directive 2000/13/EC, while Nutrition labelling of food is regulated by Directive 90/496/EEC. Standardised methods for determination of food composition, are used. Kjeldahl method has been applied to determine proteins / nitrogen content. For determination of total fats has been used: Soxlet, Weibull-Stoldt and Rose-Gottlieb Method. Fibers will be determined through the enzymatic method. Total carbohydrate content is calculated by difference, rather than analyzed directly. Under this approach, the other constituents in the food (protein, fat, water, alcohol, ash) are determined individually, summed and subtracted from the total weight of the food.

According to ISO/IEC 17025 laboratories shall have quality control procedures for monitoring the validity of tests. This monitoring may include the participation in interlaboratory comparisons or proficiency testing programmes. By these mechanisms the laboratory can provide evidence of its competence to its clients, interested parties and the accreditation body. In order to maintain accreditation and prove competence the MK - Node laboratories participated in many PT schemes, organized by the international PT providers. The evaluation of the PT results showed that the results, about the food quality and safety, are with z – score below 2. Furthermore, during the "Early Phase" of the METROFOOD-RI, the MK - Node have participated in a pilot service dedicated to characterization of a new RMs of rice grains, rice flour and oyster tissue, particulary for

determination of food composition. Given that accredited methods were used for that purpose, the new food matrix-Reference Materials (RMs) will be characterized with acceptable reference value.

Keywords: METROFOOD-RI, metrology, food quality and safety.

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