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

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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.

For the food safety the following parameters are selected: **inorganic contaminants** (trace elements), **organic contaminants** (pesticides and mycotoxins), **allergens, additives**.

During the METROFOOD-PP phase it is defined which facilities will be involved in METROFOOD-RI and what services will be provided

Within the METROFOOD activities, METROFOOD-MK Node participates in characterization of RMs and food safety&quality analysis

During the "Early Phase" of METROFOOD-RI, Laboratories from the MK - Node have participated in a pilot service dedicated to characterization of a new RMs of rice grains, rice flour and oyster tissue

For determination of total fats has been used: Soxhlet, Weibull-Stoldt and Rose-Gottlieb Method. Fibers will be determined through the enzymatic method. Kjeldahl method will be employed for protein determination. Total carbohydrate content is calculated by difference. 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.

The MK node's laboratories are equipped with:

- **Gas chromatography systems** with the following detectors: Mass Spectrometry, Nitrogen–Phosphorus Detector, Electron Capture Detector, Flame-ionization detector;
- **Liquid chromatography systems** with the following detectors: Diode-array DAD, Ultraviolet/Visible, Refractive index than,
- **Graphite Furnace Atomic Absorption Spectroscopy,** Flame Atomic Absorption Spectroscopy system, Cold vapor (flow injection mercury system)

JRU-METROFOOD-MK

Institute of Public Health

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In order to maintain accreditation and prove competence the MK - Node Laboratories participated in many PT schemes, organized by international PT providers, such as: Muva Kempten Quality Management & Laboratory Services; FAPAS; DRRR Deutsches Referenzbüro für Lebensmittel-Ringversuche und Referenzmaterialien; LGC; Asia Pacific laboratory Accreditation Cooperation etc

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