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ERASMUS + PROJECT : AG-LAB

Project “Improving skills in laboratory practice for agro-food specialists in eastern Europe» (Ag-Lab)

Program Erasmus +, project KA2 n° 586383-EPP-1-2017-1-SI-EPPKA2-CBHE-JP (2017-2978/001-001)

Minute of the training session

Lviv, 4 – 5 December 2018

Tuesday, 04.12.2018

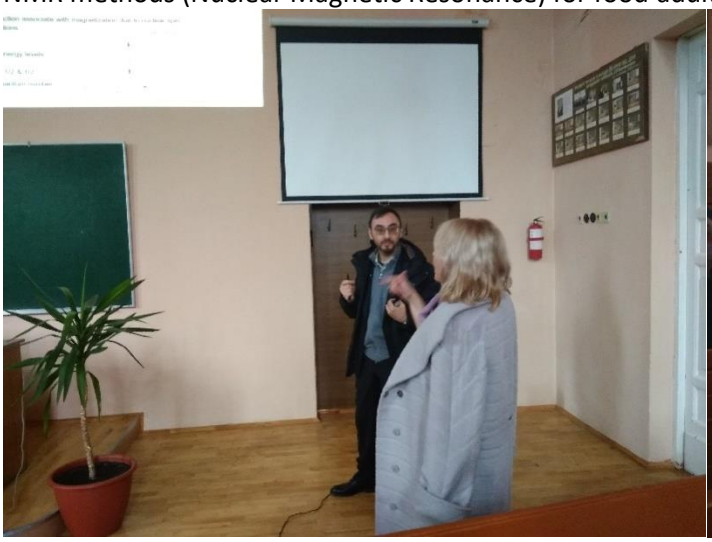
09.30 – 09.45 Welcome speech
VolodymyrStybel, *rector of the ional university of veterinary medicine and biotechnologies*
MarijaKlopcic, *project coordinator (UL)*

09.45 – 11.15
Identification of falsification of dairy products (physical and chemical methods), ***AnnaSteciwko-Zielak****, WEULS*

11.15 – 11.25
Questions – answers. Discussion

11.25 – 11.40 Coffee break

11.40 – 13.10
NMR methods (Nuclear Magnetic Resonance) for food adulteration,***Marco Chiarini,****UniTE*




13.10 – 13.20
Questions – answers. Discussion

13.20 – 14.15 Lunch

14.15 – 15.45
Maintenance and validation of complex equipment: HPLC (High performance liquid chromatography), ***Robert***


Gerard, *VetAgroSup Lyon*

15.45 – 16.00
Questions – answers. Discussion

16.00 -17.00
ISEKI food Association, ***PaolaPittia****, UniTE(via Skype)*

Summary of discussions

Mrs. Anna Steciwko-Zielak, *PhD of the Faculty of Biology and Animal Science of the Wroclaw University of environmental and life sciences* presented physical and chemical methods of identification of animal products falsification. She gave the overview of the EU regulation related to food safety, consumers informing and unfair commerce. Then she presented main types of dairy products falsification. After the explanation of main rules of sampling and samples preparation she passed to physical and chemical methods of falsification identification: detection of freezing point of milk, density of milk, polyacrylamide gel electrophoresis,sandwich ELISA, restriction fragment length polymorphism (PCR-RFLP), liquid chromatography - tandem mass spectrometry (LC-MS/MS), high performance liquid chromatography (HPLC),gas chromatography, Matrix-assisted Laser Desorption/Ionization Time of Flight Mass Spectroscopy (MALDI-TOF MS), Raman spectroscopy, Nuclear Magnetic Resonance (NMR).
(The presentation is available on the link: https://drive.google.com/drive/folders/16DE-YXeVRkXgElngRUppWVO_qkrgXP0Z?usp=sharing)

Mr. Marco Chiarini, *professor of Department of Bioscience and Technology for Food, Agriculture and Environment, the University of Teramo* presented the Nuclear Magnetic Resonance (NMR) method applied at laboratory. He explained when this method was applied, e.g. natural products chemistry, organic synthetic chemistry, proteins, ADN analysesetc. He presented the principle of the work of this method and equipment existing for it. Then he gave several concrete examples: the application of nuclear magnetic resonance spectroscopy in food adulteration determination: theexample of Sudan dye I in paprika powder, quantification of ethyl carbamate in spirits. He explained as well the application of this method for milk, wine and other beverages analyses and its advantages. (The presentation is available on the link: https://drive.google.com/drive/folders/16DE-YXeVRkXgElngRUppWVO_qkrgXP0Z?usp=sharing)

The presentation of ***Mr. Robert Gerard****, professor head of the metrology service of VetAgroSupLyon* was devoted to the complex laboratory equipment and namely maintenance and validation of highly performance liquid chromatography. Mr. Gerard presented the scheme of the typical liquid chromatography and explained the principles of its functioning. He presented the problems occurring at different levels of chromatography chain and related necessary and possible actions for their management. He compared ancient and up-to-date chromatography systems and presented the principles for the frequency definition for maintenance actions. (The presentation is available on the link:https://drive.google.com/drive/folders/16DE-YXeVRkXgElngRUppWVO_qkrgXP0Z?usp=sharing)

The presentation of **Mrs. Paola Pittia**, *professor of the University of Teramo* devoted to the activities of the ISEKI association couldn't take place by Skype because of technical problems. But it is available on the link: https://drive.google.com/drive/folders/16DE-YXeVRkXgElngRUppWVO_qkrgXP0Z?usp=sharing

Tuesday, 05.06.2018

09.30 – 11.00
Metrology at the laboratory: calibration, verification …. what after?***Robert Gerard****, VetAgroSup Lyon*


11.00 – 11.15
Questions – answers. Discussion

11.15 – 11.30 Coffee break

11.30 – 13.00
Internal audit in laboratory,***KatarzynaKosek-Paszkowska****, WUELS*

13.00 – 13.15
Questions – answers. Discussion

13.15 – 14.15Lunch

14.30 – 15.30
Visit of the Lviv state regional laboratory of the veterinary medicine


16.00 – 17.00
Visit of the laboratories of the Lviv research institute of veterinary drugs and feed additives


Summary of discussions

The presentation of **Mr**. ***Robert Gerard****, head of the metrology service ofVetAgroSup Lyon* was devoted to the metrology at laboratory. This presentation had a practical approach. At the beginning Mr. Gerard gave the definition of the main metrological notions: verification, calibration, maximum permissible error, measurement uncertainty. Then he demonstrated the practical case from his own experience: calibration of the thermometer chain. Further he explained the treatment of metrological data: correction management, uncertainty management and the edition of metrological report.(The presentation is available on the link:https://drive.google.com/drive/folders/16DE-YXeVRkXgElngRUppWVO_qkrgXP0Z?usp=sharing)

Mrs. ***KatarzynaKosek-Paszkowska****, professor of the Wroclaw university of environmental and life sciences* treated the topic devoted to the internal audit at laboratory. At the beginning she presented the objectives of the audit with the stress on its independence. Then the requirement to quality systems auditors according to ISO 9001 and ISO 17025 were presented as well. After the presentation of different types of the audit she explained its main stages: preparation and planning, schedule, on-site audit, report, post-audit actions.

(The presentation is available on the link:https://drive.google.com/drive/folders/16DE-

YXeVRkXgElngRUppWVO_qkrgXP0Z?usp=sharing)

In the afternoon all trainees visited two laboratories located in Lviv.

1. Lviv state regional laboratory of the veterinary medicine: this laboratory is dependent of the Institute of laboratory diagnostic and veterinary and sanitary expertise. The group was received by the director of the laboratory **Mr. Roman Simon.** He presented the main sectors of the laboratory activities. It is famous by its very powerful virology unit. That was equipment in the framework of the American

   biosecurityprogramme. The trainees visited all units of the laboratory where the equipment and the analyses carried out were presented to them.

2. Lviv research institute of veterinary drugs and feed additives: the group was received by the deputy director of the institute **Mr. Roman Musyka**that presented the mains activities of the Institute: essays of new veterinary drugs, control of standards respect, certification of veterinary drugs, raw materials and animal products, detection of residues of veterinary drugs and toxic matters in animal products, feeds and raw materials. The international activity of the institute is very active: participation in international projects, cooperation with international organizations. The trainees visited different laboratories of the Institute, communicated with specialists that explained them the work that was charring out in the moment of the visit.