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## **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)

### **Speciality: Food Technologies**

### **Specialization: Control of quality and safety in food industry (Laboratory practice)**

### **Professional competences / References**

#### **General competences**

1. Knowledge of theory, regularities, methods (algorithms) and activities that are sufficient for the formation and implementation of own professional activity model, including in extreme conditions.
2. Ability to independently substantiate research tasks; to plan, to organize and to conduct scientific research, including multidisciplinary, in conditions of educational and research laboratories, as well as in production conditions; to interpret and present results of scientific experiments, to implement them into production.
3. Ability to compose and formalize scientific and technical, normative and laboratory documentation, scientific reports, reports, articles, intellectual property documents, etc.
4. Ability to use results of scientific research to improve existing and to develop new technological solutions, to optimize technological processes, taking into account their features and using the best practices of their implementation.
5. Ability to implement innovative food technologies, taking into account energy and resource saving; to improve the quality of food products and to predict further industry development.
6. Ability to organize and to develop foreign economic relations of enterprises, laboratories and sectoral organizations.

7. Ability to use modern methods that are used to assess the quality of food raw materials, semi-finished products and food products.
8. Ability to organize a system for controlling quality and safety of food raw materials, semi-finished products and food products.
9. Ability to develop practical recommendations for the use of research results.

### **Competences for the laboratory practice**

10. *Ability to obtain general knowledge on the organization and functioning of laboratories (general laboratory requirements (Good laboratory practice), certification and accreditation of laboratories, metrological support, international standards ISO 17025, ISO 9001, ISO 14001, ISO 45001, methods validation, biosafety level in the laboratory, European regulations of laboratory work).*
11. *Knowledge of the organization of chemical and microbiological laboratories of a food enterprise (control over the formation of batches of raw materials and semi-finished products; sampling for testing; conducting of laboratory tests with raw food materials, semi-finished products and food products).*
12. *Knowledge of mostly used recent analytical approaches in food industry (i.e. methods of atomic emission, gas and liquid chromatography, polymerase chain reaction, atomic absorption, ELISA, biochemical methods of analysis, etc.).*
13. *Ability to develop and implement innovative scientific projects of fundamental and applied directions.*
14. *Ability to use professionally-profiled knowledge to develop programs for the development and efficient functioning of food business laboratories.*
15. *Theoretical and practical knowledge of the features of physical, chemical, biochemical and microbiological scientific research.*
16. *Knowledge of methods for the falsification determination of food raw materials and food products.*
17. *Knowledge of sensory analysis methods of food raw materials and food products.*

18. *Ability to present results of scientific researches and design decisions in Ukrainian and foreign languages.*
19. *Ability to organize a company work in accordance with the requirements of labor protection and life safety.*
20. *Ability to apply procedures to control laboratory diagnostic efficiency (internal and cross audit, verification, validation (confirmation)), quality assurance of laboratory researches (intra and inter-laboratory control).*
21. *Ability to apply procedures of calibration and verification of measurement equipment.*
22. *Ability to organize activities for laboratory researches quality insurance at pre-analytical, analytical and post-analytical stages.*
23. *Knowledge of requirements of EU hygienic package, EU regulation and Codex alimentarius, national legislation relative to Maximum tolerable levels, to control toxic matters and contaminants in foodstuffs; ability to use these knowledge for interpretation of laboratory researches results.*
24. *Knowledge of procedures and ability to organize activities for recycling of wastes, used samples, materials and chemicals.*
25. *Knowledge of documents management procedures.*