

QUALITY ASSURANCE AND FOOD SAFETY FOR PRODUCTS OF ANIMAL ORIGIN

STRUCTURE

Study program	Food Safety and Biosecurity
<i>Study year</i>	II
<i>Semester</i>	3
<i>Subject type</i>	DA
<i>Total number of hours per week</i>	Course – 2 hours; PA - 3 hours
<i>Total number of hours according to curriculum</i>	Course – 28 hours; PA – 42 hours
<i>Number of transferable credits</i>	10

OBJECTIVELE DISCIPLINEI

The course aims to provide knowledge, understanding of concepts, basic theories, and methods related to technologies used in the processing of animal products, control of production phases, animal products toxicity, and final product inspection.

Knowledge the of quality of animal products, the processing technologies, the falsifications, methods applied for sanitizing and conservation.

SUBJECT CONTENT

COURS	No. hours
Chapter 1. Quality assurance in the animal products processing factories. Implementation of quality assurance systems in industrialization factories of animal products. HACCP: importance, principles, steps, implementation stages; risk identification; critical control points determination; establishing and monitoring critical limits,	4
Chapter 2. Quality assurance and food safety in the dairy industry. Milk quality. Sensory, physicochemical and microbiological properties of milk. Milk processing technologies: pasteurized milk, fermented milk products, butter and cream, and cheese. Risks associated with technological processes of production and conservation of dairy products.	4
Chapter 3. Quality assurance and food safety in the meat industry. Meat quality. Sensory, nutritional proprieties and innocuity of meat. Meat processing technologies: slaughtering; meat products technology (fermented sausages, canned meat). Conservation methods applied in the meat industry; quality of meat products; falsification of meat products. Risks associated with technological processes of obtaining and preserving meat products.	4
Chapter 4. Quality assurance and food safety in the fish industry. Sensory properties of fish. Microorganisms, toxins and parasites in fish or other aquatic species. Fish processing technologies. Quality of fish products. Risks associated with technological processes of obtaining and preserving fish products.	4
Chapter 5. Quality assurance and food safety in the poultry sector. Poultry processing technologies: slaughtering and processing. Conservation and enhancement of eggs and poultry meat. Quality and falsification of poultry products. Risks associated with technological processes of obtaining and preserving poultry products.	4
Chapter 6. Quality assurance and food safety in the beekeeping field. Production, harvesting and enhancement of bee products (honey, royal jelly, propolis, pollen, venom and beeswax). Quality and falsification of apiculture products. Risks associated with technological processes	4
Chapter 7. Hygiene in processing units for products of animal origin: workers, areas and workspace; equipment, water and air hygiene.	4

PRACTICAL ACTIVITY	No. hours
1. Introduction. Presentation of laboratory work and work protection rules.	2
2. Milk analysis Sensory analysis of milk Physico-chemical analysis of milk: density, fat, proteins, acidity, dry matter, contamination degree Microbiological evaluation	3
3. Evaluation of fermented milk products: kefir, yogurt, milk acidophilic Sensory analysis Physico-chemical analysis of fermented milk products: fat, protein, acidity, dry matter, microbiological evaluation	4
4. Evaluation of fat milk products (butter, cream) Sensory analysis Physico-chemical analysis: fat, acidity, NaCl	3
5. Cheese analysis Sensory analysis Physico-chemical analysis: fat, acidity, NaCl	3
6. Physico-chemical analysis of meat. Sensory analysis of meat Evaluation of the freshness of the meat: pH; hydrogen sulfide; ammonia; and meat peroxidase Determination of chemical composition: meat proteins, fat, water, ash	3
7. Meat products analysis Sensory analysis of meat products. Physico-chemical analysis: proteins, fat, water, ash, NaCl, nitrite, soy protein Sensory and physicochemical analysis of canned meat	4
8. Analysis of lipids Sensory analysis of lipids Determination of water, iodine value, saponification number, acid value, peroxide value	3
9. The structure and composition of the egg; egg morphology. Sensory analysis Physico-chemical analysis (determination of protein, fat, water content and ash, pH) Determination of Yolk index and albumen index	3
10. Physico-chemical analysis of fish: Recognition of major fish species Determination of the state of freshness; water content; total protein; fat; free hydrogen sulfide; ash; pH; NaCl; acidity	3
11. Quality of bee products	2
12. Physico-chemical analysis of honey. Sensory analysis and microscopic examination of honey Analysis of physicochemical indices: color, density, conductivity, acidity, pH Determinarea indicilor fizico-chimici specifici ai cerii (punctul de topire; indicele de aciditate; indicele de saponificare; indicele de ester; indicele de raport). Determining the specific physicochemical indicators of beeswax: melting point, acid index value, saponification number, esters index	3
13. Evaluation of enzyme activity: amylase activity (diastase index) in honey and pollen (Gotham method); catalase activity in honey and pollen	3
14. Detection of honey adulteration Determination of corn syrup from adulterated honey; Identification of synthetic sweetening substances from honey; Identification of honey preservatives	3

BIBLIOGRAPHY

1. Banu Constantin (coord.) (2008) *Sovereignty, Security and Food Safety*, Editura ASAB, București;
2. Banu Constantin (coord.) (2009) *Food for Health*, Editura ASAB, București;
3. Bădulescu Liliana, Bujor Oana-Crina, Stan Andreea, Lagunovschi-Luchian Viorica, Ion Violeta Alexandra, Dobrin Aurora, Constantin Carmen, Dragomir Nela, Nicolae Carmen Georgeta (2021) *Procesarea fructelor și legumelor ecologice - Manual suport pentru un Cod de Bune Practici* EDITURA EX TERRA AURUM;
4. Dragomir Nela (2020) Quality assurance and food safety for vegetable origin products. Curs note;
5. Food and Drug Administration (FDA) in accordance with The FDA Food Safety Modernization Act (FSMA) (Pub. L. 111-353);

Type of activity	Evaluation criteria	Evaluation methods	Percent in final grade %
Course	Correctness and completeness of the theoretical knowledge	Summative evaluation by exam	70%
Practical activity	Correctness and completeness of the theoretical knowledge	Summative evaluation by exam	30%

Course coordinator: **Ph.D. Gabriela BERCHET**

Practical activity coordinator: **Ph.D. Gabriela BERCHET**