

Technology of meat and meat products (IVth Year of study, VIIth SEMESTER)

Credit value (ECTS) 5

Course category

Domain (Imposed)

Course holder:

Prof. Paul Corneliu Boișteanu, PhD

Discipline objectives (course and practical works)

The course aims learning on the characteristic quality elements of live animals intended for slaughtering, the processing and objective assessment of the innocuousness, the intrinsic and extrinsic quality of meat and meat products, and the identification of the temporal biochemical pathway of the meat.

The aim is to learn the latest scientific innovations in the literature on modern technologies for processing, preservation, knowledge useful for improving and obtaining the necessary expertise of food-processing specialists with regard to:

- improving the systems and assessment criteria of food quality of animal origin (meat and meat products);
- designing and applying the technological stages of meat processing;

Discipline content (analytical program)

Course (chapters/subchapters)
The nutritional importance of meat
The factors that influence the meat production and its quality
The factors that influence the slaughtered animals meat production
Influence of preslaughter operations on meat quality
The quality assessment of animals destined for slaughtering
The assessment of bovine
The assessment of porcine
The assessment of ovine
The assessment of birds
Preparation of animals for slaughter
Technology of animal slaughter and obtaining the carcasses
Suppression of animal life
Processing the carcasses
Quality assessment of the carcasses
Technologies to improve the meat quality
Cold shock treatment of pigs in vivo
Electrical stimulation of the carcasses
Conditioning the meat before refrigeration
Morph- physiology of striated muscle and meat biochemistry
Morphological structure of striated muscle tissue
Energy sources of muscular contraction
Metabolic and contractile specialization of the muscle
Energetic metabolism in muscle tissue in vivo
Glycogen metabolism and regulatory mechanisms

Chemical composition of meat (muscle, adipose, bone, connective tissue)
The concept of meat quality
Sensorial characterization
Physico-chemical characterization
Microbiological characterization
Technological characterization
Meat microbiology
Methods for preservation - chilling, freezing, salting, smoking

Practical works
Examination and analyses that are made directly on meat and meat extract
Sensory characteristics of meat for sanitation appreciation
Determination of the physical parameters of meat
Determination of the chemical composition of meat
Determination of protein
Determination of vitamins: ascorbic acid
Determination of water
Determination of sodium chloride
Determination of nitrites
Determination of easily hydrolysable nitrogen
Determination of amino nitrogen
Determination of non-protein nitrogen
Determination of easily hydrolysable nitrogen by direct titration with hydrochloric acid
Quantitative determination of ammonia by distilling with MgO
Determination of water retention capacity by determining the volume of myofibrils
Determination of water retention capacity, pressing method
Determination of titratable acidity
Determination of fat – Soxhlet method
Determination of pH
Determination of sarcoplasmic proteins by biuret method

References

1. Banu C., Tofan I., Antoaneta Stoicescu - Progrese tehnice, tehnologice și științifice în industria alimentară. vol I, Ed. Tehnică București, 1992.
2. Banu C., Oprea Al., Dănicel Gh. - Îndrumător în tehnologia produselor din carne. Ed. Tehnică, București. 1985.
3. Banu C., Alexe P., Camelia Vizireanu - Procesarea industrială a cărnii. Ed. Tehnică, București, 2003.
4. Coțofan V.și col - Anatomia animalelor domestice. vol I,III, Ed.Orizonturi universitare , Timișoara, 2002
5. Cuciureanu Rodica - Chimia și igiena mediului și alimentului. Ed. Gr. T. Popa , Iași, 2003
6. Georgescu Gh., Banu C. - Tratat de producerea, procesarea și valorificarea cărnii. Ed. Ceres, 2000.
7. Moțoc D., Banu C. - Biochimia cărnii și a subproduselor. Ed.Tehnică , București ,1966.
8. Neamțu G. - Biochimie alimentară . Ed. Ceres, 1977.
9. Negrea A. -Tehnologia, calitatea și controlul sanitar veterinar al produselor de origine animală. Ed. Moldogrup, Iași, 2001.
10. Oțel I. - Tehnologia produselor din carne. Ed.Tehnică , București, 1979.

11. Paștea E. - Atlas practic de anatomie veterinară. Ed. Ceres, București, 1979.
12. Savu C., Mihai Gabriela - Controlul sanitar veterinar al alimentelor. Ed. Ceres, 1997.
13. Bondoc I., Șindilar E.V., 2002. Controlul sanitar veterinar al calității și salubrității alimentelor. Volumul I. Ed. "Ion Ionescu de la Brad", Iași.

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Examination	Oral examination	70%
Appreciation of the activity during the semester	Oral assessment during the semester, verification tests and final laboratory colloquium.	30%

Contact

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Technology of meat and meat products (IVth Year of study, VIIIth SEMESTER)

Credit value (ECTS) 4

Course category

Domain (Imposed)

Course holder:

Assist. Prof. Dr. Roxana Lazăr, PhD

Discipline objectives (course and practical works)

The course aims the acquirement by the students of knowledge about designing technological slips and obtaining the semi products used in the food industry, of raw and auxiliary materials, stages of technological flows in obtaining the products, the usage of starter cultures and microorganisms. As well, is necessary the assimilation of technologies for obtaining cans and semi-cans.

In practical work, students acquire the working principles on the organoleptic and physico - chemical analysis necessary to characterize the quality of the products.

Contents (syllabus)

Course (chapters/subchapters)
Cutting-boning-picking the meat
Obtaining semipro ducts: forcemeat
Classification of meat products
Raw materials used to obtain meat products
Auxiliary materials used to obtain meat products
Materials used to obtain meat products
Protein derivatives used in the meat industry
Protein derivatives of animal origin
Protein derivatives of vegetal origin
General manufacturing technologies for meat products: salami and sausages
Stages of the technological flow chart for obtaining meat products
Modern technologies in manufacturing some meat products
Manufacturing meat products by coextrusion technique
Manufacturing aerated meat products
Manufacture of sausages without membranes
Manufacturing technology for raw meat products
Classification of raw meat products
Manufacturing technology for raw-smoked-dried-matured meat products
Manufacturing technology for raw and dried meat products
Salami and raw sausage microflora
Technology of starter cultures
Processing technology of by-products and waste in meat industry
Processing technology for heads
Processing the organs
Processing the by-products - offal
Processing technology for intestines
Manufacturing technology for semi cans

Manufacturing technology for cans
Quality management systems for the industry of meat and meat products

Practical works
Sensory characteristics of meat products
Sanitation assessment of meat products
Determination of the physical parameters of meat products
Quality assessment of edible organs
Defects in meat products
Determination of protein
Determination of sodium chloride
Membranes used in meat industry
Determination of nitrites, nitrates
Determination of gross chemical composition of meat products
Determination of fat – Soxhlet method
Determination of pH
Examination of animal fats
Practical application in slaughter technological flow chart and manufacturing meat products

References

1. Banu C., Tofan I., Antoaneta Stoicescu - Progrese tehnice, tehnologice și științifice în industria alimentară. vol I, Ed. Tehnică București, 1992.
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