SELECTED CHAPTERS FROM THE TECHNOLOGY OF ANIMAL FOODSTUFFS

ECTS: 5

Course coordinator: Assist. Prof. Dr. Lea Gašperlin

Lecturers: Assist. Prof. Dr. Lea Gašperlin, Prof. Dr. Bogdan Perko, Assist. Prof. Dr. Andreja Čanžek Majhenič, and invited lecturers

No. of hours: Lectures: 10    Seminar: 10    Lab. work: /
125
Other: 105

2. Entry requirements:
Completed university or 2nd level Bologna studies from the wider field of natural history, mathematics and computer studies or the narrower field of life sciences (Klasius classification).

3. Objectives of the course and intended learning outcomes:
(competences)
Educational aims: The basic educational aim is to deepen knowledge for independent work in the field of research into the processing of meat and milk, with a stress on familiarising students with the principles and technologies of processing, both traditional and contemporary, and ensuring the quality and safety of foods of animal origin.
Intended learning outcome: The intended learning outcome is to qualify the candidate for carrying out the mentioned research, the results of which will make an important contribution to basic or applicative science in the field of food science.

4. Syllabus outline:
Meat:
- problems of heterocyclic amines in heat processed foods of animal origin (acquaintance with biosynthesis pathways, their identification, operation in vitro, physiological health effects of some heterocyclic amines and products of Maillard’s reaction
- problems of the fatty acid profile of meat and meat products (influence of animal feed, analytics, possibility of development of functional foods with optimal fatty acid profiles)
- processes of thermal and non-thermal conservation of meat (aseptic processing, microwave heating, new technologies, sous vide technology, active packing etc.)
- with the help of the most recent literature, students will prepare seminar tasks in which they will research specific topical problems, if possible in connection with their research work

Milk:
- bacteriocid lactic acid bacteria and the possibility of their use as natural bioconservative agents – case of nisin (definition, synthesis, classification, properties, function, application, regulative)
- traditional fermented milk products: preserving the characteristics and ensuring safety (use of contemporary techniques of molecular biology for identification of predominant “autochthonous” microflora and evaluating their technological and antimicrobial potential; microbiological safety – virulence factors, resistance to antibiotics; preserving microbial biodiversity)
- selected chapters from milk processing.

5. Literature (in the case of books and monographs, study sources are only selected chapters from them):
- Current scientific periodicals.

6. Teaching methods:
Lectures, independent study and production of seminar task.

7. Assessment methods:
The student prepares a project seminar task on a selected theme, which is a condition for taking the written examination.
Student's obligations:
a) public defence of seminar task,
b) written or oral examination.
Test of knowledge:
Seminar (50 %), written or oral examination (50 % of final grade).

8. References:

Gašperlin Lea
2. POLAK T., ANDRENŠEK S., ŽLENDER B., GAŠPERLIN L. 2008. Effects of ageing and low internal temperature of grilling on the formation of heterocyclic amines in beef longissimus dorsi muscle. LWT - Food Science and Technology Article in Press, Accepted Manuscript, doi:10.1016/j.lwt.2008.03.001 (Impact factor of this journal 2006: 1.299 )
Perko Bogdan
1. BOGOVIĆ MATIJAŠIĆ, Bojana, KOMAN RAJŠP, Mojca, PERKO, Bogdan, ROGELJ, Irena. Inhibition of Clostridium tyrobutyricum in cheese by Lactobacillus gasseri. Int. dairy j. [Print ed.], 2007, letn. 17, št. 2, p. 157-166. [COBISS.SI-ID 1875080] JCR IF: 2.054, SE (8/93), food science & technology, x: 0.922


Čanžek Majhenič Andreja
1. ČANŽEK MAJHENIČ, Andreja, ROGELJ, Irena, PERKO, Bogdan. Enterococci from Tolminc cheese : population structure, antibiotic susceptibility and incidence of virulence determinants. Int. j. food microbiol. [Print ed.], 2005, letn. 102, p. 239-244. [COBISS.SI-ID 1742216] JCR IF: 2.499, SE (4/93), food science & technology, x: 0.922, SE (33/86), microbiology, x: 3.016
