

26239 - Enrichment in the Meat and Fish Sector

Información del Plan Docente

Academic Year	2016/17
Academic center	105 - Facultad de Veterinaria
Degree	294 - Degree in Food Science and Technology
ECTS	6.0
Course	4
Period	Second semester
Subject Type	Optional
Module	---

1. Basic info

1.1. Recommendations to take this course

1.2. Activities and key dates for the course

2. Initiation

2.1. Learning outcomes that define the subject

2.2. Introduction

3. Context and competences

3.1. Goals

3.2. Context and meaning of the subject in the degree

3.3. Competences

3.4. Importance of learning outcomes

4. Evaluation

5. Activities and resources

5.1. General methodological presentation

The course is structured in 6 specific knowledge matter blocks, each one of them includes theoretic and practical activities. The total of lectures is 48, of one hour each. Those lectures include two types: 1) Presentation and analysis of current issues, problems and challenges in meat and fish sectors (18 h). Suitable material will be put at disposal of the students for their work on the chosen subject. 2) Discussion of innovative strategies for giving solutions to those problems and challenges, on the basis of the work presented by student groups (30 h). These last may be considered as seminars, in which all the students will have an important role in discussion, as the teacher act as moderator and concluding chairperson.

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Practical activities will be also hold on the most innovative technological subjects (6 sessions of 2 h; a total of 12 h). These activities will be carried out in laboratories, pilot plant, sensory analysis facilities and private companies.

5.2.Learning activities

48 h of lectures and 12 h of practical activities

5.3.Program

The programme offered to the student for reaching the expected results comprises the following contents:

Block 1. Fresh meat

Packaging and shelf life of fresh meat. New developments.

Use of antioxidant and antimicrobial agents for extending the shelf and display life of fresh meat.

The rising problem of *Campylobacter* in fowl meat. Technological solutions.

Distribution and marketing systems for fresh meat.

Decontamination of carcasses and meat pieces.

Problems and cases related to the specific legal regulations for fresh meat.

Problems and cases related to hygiene, safety management and quality control applied to fresh meat.

Relations of technology, culture, society and food. The case of meat.

Cultural diversity and meat consumption; globalization.

Generated contaminants by meat industry. Techniques for reducing the generation of contaminants. Management of residues and by-products. Cases.

Meat market structure. Effects of EU policy on the meat production system. Marketing strategies.

Block 2. Fresh fish

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New species in aquaculture; strategies of marketing.

Fatty species; their conservation in protective atmospheres.

Advances in the processing of fresh fish.

Ice "gel"; advantages and disadvantages.

Cases and problems related to the specific legislation applicable to fresh fish.

Cases and problems related to hygiene, management of food safety and quality control applied to fresh fish.

Technology, culture, society and food. Food practices: consumption of fish and its derivatives. Conditioning factors of production, processing and consumption of fish.

Cultural diversity and fish consumption. Globalization.

Generated contaminants by fish industry. Techniques for reducing the generation of contaminants. Management of residues and by-products. Cases.

Market Structure of fishery products and aquaculture (production, processing and marketing at national and international level). Foreign trade of fishery products and aquaculture. EU Fisheries Policy.

Block 3. Prepared meats

Development of new products and presentations: marinades.

Emerging pathogens in prepared fresh meats.

Shelf life, packaging and marketing of prepared fresh meats.

Specific legislation applicable to prepared fresh meats.

Cases and problems related to hygiene, management of food safety and quality control as applied to prepared fresh meats.

Block 4. Cured meat products

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Developments and innovation in packaging and slicing cured meat products.

Problems caused by the presence of *Listeria* for the export of cured meat products.

Dry-curing process optimization.

Specific legislation applicable to cured meat products.

Cases and problems related to hygiene, management of food safety and quality control as applied to cured meat products.

Block 5. Cooked meat products

Optimization of manufacturing processes of cooked meat products.

Developments and innovation in packaging and slicing of cooked meat products. Treatments for the reduction of the microbial load.

Problems related to "artificial" textures in cooked meat products.

Specific legislation applicable to cooked meat products.

Cases and problems related to hygiene, management of food safety and quality control as applied to cooked meat products.

Block 6. Fish products

New products, new presentations derived from fish.

Development and production of cephalopods surimi.

Specific legislation applicable to fish products.

Cases and problems related to hygiene, management of food safety and quality control as applied to fish products.

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Block 7. Molecular Basis

Molecular Basis of Genetic Engineering: What is molecular biology? Central Dogma of biology (-omics era). DNA: structure, replication, transcription, translation. Creation of mutants.

Applications of Genetic Engineering for improving the quality and safety of food derived from meat and fish. Specific case: introduction of plant genes. PCR-based methods.

Use of bioinformatic tools and databases to search for genetic sequences of interest

5.4.Planning and scheduling

The dates of the activities of the subject are published along with the rest of subjects fourth year on the website of the Faculty of Veterinary Medicine (<http://veterinaria.unizar.es/gradocta/>) which is updated at the beginning of the course academic.

5.5.Bibliography and recommended resources

<http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=26239&Identificador=12158>