Universidad Zaragoza

Academic Year/course: 2023/24

30837 - Enrichment in the Meat and Fish Sector

Syllabus Information

Academic year: 2023/24
Subject: 30837 - Enrichment in the Meat and Fish Sector
Faculty / School: 105 - Facultad de Veterinaria
Degree: 568 - Degree in Food Science and Technology
ECTS: 5.0
Year: 4
Semester: Second semester
Subject type: Optional
Module:

1. General information

Generally speaking, the objectives of the subject are complementary to those of the subject

"Meat and Fish Technology" of the first four-month period. In other words, the aim is to deepen in the competences on: obtaining, processing, preservation and quality control of meat and fish; as well as on the characteristics, processing technology, preservation, quality control and development of all its products and derivatives. The multidisciplinary orientation given to this subject is of great importance when dealing with topics of considerable interest in the meat and fish industries.

These goals are aligned with the following Sustainable Development Goals (SDGs) of the United Nations

Agenda 2030 (https://www.un.org/sustainabledevelopment/es/). -Goal 3: Health and Wellness

Goal 4: Quality Education.

Goal 5: Gender Equality.

Goal 9: Industry, Innovation and Infrastructure

Goal 12. Responsible Production and Consumption

This subject develops the specific contents of the Intensification in the Meat and Fish Sector

And in a complementary manner with the Pilot Plant Practicum, the External Internships and the

Degree Final Project .

Together with the other subjects, it will contribute to achieve the specific competences of the professional profiles and subjects (in particular with regard to the meat and fish industries and their derivatives), in relation to:

-Management and quality control of products in the food industry

-Food Processing and Engineering

-Food safety

-Development and innovation of processes and products in the food industry

-Legal, scientific and technical advice in the food industry

-Teaching and research in the food industry

In order to take this subject, it is advisable to have taken most of the subjects in previous years, especially Meat and Fish Technology. Intensification in the Meat

And Fish sectors is a deepening of these sectors with the objective that students acquire the most current knowledge and competences in the mentioned sectors.

2. Learning results

In order to pass this subject, the students shall demonstrate they has acquired the following results:

Is able to solve problems related to the selection and application of raw materials, ingredients, additives and the most appropriate technologies for processing, preservation or transformation, of these foods, according to the desired quality, safety and shelf life, as well as to the socio-cultural and economic factors that condition them.

Is capable of collaborating with other professionals in the selection of the most appropriate equipment, production lines and facilities for each type of food processing, as well as the identification of contaminants and management of waste and by-products generated in these processes.

Is capable of developing new processes and products in the meat and fish industries.

Is able to deepen and apply the theoretical knowledge of food safety and quality management, as well as legal regulations, to the analysis of situations and resolution of specific problems or problems of major current interest, related to the meat and fish industry.

Is able to elaborate a work or project on a topic relevant to the subject, from information sources in Spanish or English, integrated with other subjects, and present it orally

3. Syllabus

Block 1. Fresh meat

Fresh meat packaging and shelf life. New developments.

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

Technology, culture, society, food.

Cultural diversity and meat consumption. Globalization.

Contaminants generated. Techniques to reduce contamination. Waste management and/or by-products generated. Case studies.

Market structure (production, consumption and market at national and international level).

Effects of the Agricultural Policy on the meat production chain.

Block 2. Fresh fish

Advances in fresh fish processing.

Problems and cases related to hygiene, food safety management and quality control applied to fresh fish

Technology, culture, society, food.

Factors conditioning fish production, processing and consumption.

Cultural diversity and fish consumption. Globalization.

Contaminants generated. Case studies.

Market structure of fishery and aquaculture products (production, processing and marketing of fishery and aquaculture products at national and international level).

Block 3. Fresh meat preparations

Development of new products and presentations: marinades. Shelf life, packaging and marketing of fresh meat preparations. Problems and cases related to hygiene, management of food safety and quality control applied to fresh meat preparations.

Block 4. Cured meat products

Developments and innovation in the packaging and slicing of cured meat products. Problems and cases related to hygiene, food safety management and quality control applied to cured meat products.

Block 5. Cooked meat products

Optimization of cooked meat product manufacturing processes. Developments and innovation in the packaging and slicing of cooked meat products. Problems and cases related to hygiene, food safety management and quality control applied to cooked meat products.

Block 6. Fish by-products

New products. Problems and cases related to hygiene, food safety management and quality control applied to fish products.

Block 7. Molecular basis

Molecular Basis of Genetic Engineering: What is molecular biology? Central dogma of the biology (era of -omics). DNA: structure, replication, transcription, translation. Creation of mutants. Genetic Engineering Applications for the improvement of the Quality and Safety of food derived from Meat and Fish. A specific case: introduction of plant genes.

PCR-based methods. Bioinformatics tools and use of databases for the search of genetic sequences of interest

4. Academic activities

The subject is structured in 7 blocks of specific contents. The total number of theoretical classes is 40 of 1 hour duration. These master classes will be of two types:

1) Presentation and analysis of current problems and challenges in the meat and fish sectors (15 hours), in which material will be given to students so that they can work on these topics;

2) Discussion of innovative strategies to solve these problems and challenges, with intense student participation (25 h.)

In addition, seminars will also be included in which tutored papers will be presented. In the seminars the students will discuss the prepared work. Each student will make a presentation and everyone in the subject will participate in it.

5. Assessment system

Evaluation of individual tutored work: The individual tutored work will consist of the oral presentation of a topic assigned or related to the seminars, in which all aspects of the subject (technology, quality and safety, marketing, environmental and anthropological) must be integrated. Passing this test will partially accredit the achievement of learning result 5. A minimum grade of 5 out of 10 will be required. The presentation is scheduled for 20minutes and the defence for 10 minutes.

Overall test

Written test of theoretical knowledge: It will consist of 4 medium development questions corresponding to the theoretical teaching