Universidad Zaragoza

Academic Year/course: 2023/24

30836 - Enrichment in the Milk and Egg Product Sector

Syllabus Information

Academic year: 2023/24
Subject: 30836 - Enrichment in the Milk and Egg Product 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

In this subject we study aspects related to food safety and legal regulations, of great importance for the industries of the mentioned sectors. Technological advances, standards and procedures for controlling product quality parameters at the end of the process and throughout its shelf life are also studied.

We also cover issues of waste disposal and management in the dairy and egg product industries, as well as market, marketing, and socio-economic aspects

These goals are aligned with the following SDGs of the United Nations 2030 Agenda (https://www.un.org/sustainabledevelopment/es/) : SDG3 health and well-being, SDG4 quality education, SDG6 clean water and sanitation, SDG7 affordable and clean energy, and SDG9 industry, innovation and infrastructure.

2. Learning results

1. To know and determine the quality parameters of dairy products and egg products.
2. To establish a quality control system for raw materials and the final product in the processing of dairy and egg products.
3. To identify the causes of a problem encountered in the processing of dairy and egg products and propose a solution.
4. To apply in practice a procedure for the elaboration of a dairy or egg product and the methods of analysis to control its quality.
5. To know and know how to explain the structural aspects of the market and commercialization of dairy products and egg products, as well as the socio-economic factors conditioning their consumption.
6. To develop new processes and products throughout the dairy and egg products industry, knowing their impact on the market and the consumer.
7. To apply theoretical knowledge on food safety and quality management, as well as legal regulations, to the analysis of situations and problem solving related to the milk and egg products industry.
8. To deepen the knowledge of emerging risks associated with processing, packaging, preservation, storage and distribution of dairy and egg products.

3. Syllabus

1. THEORETICAL CLASSES

BLOCK I. Technological advances and quality control of dairy products and egg products

Topic 1: Liquid, concentrated and powdered milks

Topic 2: Fermented milks

Topic 3: Cream, butter and ice cream

Topic 4: Fresh, ripened and processed cheeses

Topic 5: Eggs, egg products and milk and egg desserts

BLOCK II. Food safety and legal regulations for dairy products and egg products

Topic 6. Hygienic requirements for the export of dairy and egg products.

Topic 7. Emerging risks in the dairy and egg products sector.

Topic 8. Strategies to sustainably balance and optimize human, animal and ecosystem health applied to the dairy and egg products sector.

BLOCK III. Environmental aspects of the dairy and egg products sector

Topic 9: Types of contaminants and waste management in the dairy and egg product industries.

BLOCK IV: Dairy and egg products sector: structure, marketing chain, consumption and cultural aspects

Topic 10: Structural aspects of the market and commercialization chain of dairy products at the national level and internationally.

Topic 11: Market and commercialization of egg products at the national level.

2. PRACTICAL CLASSES

- Practice 1. Preparation of whipped yogurt and firm yogurt.
- Practice 2. Evaluation of butter quality.
- Practice 3. Production of fresh cow's and goat's milk cheeses.
- Practice 4. Sensory analysis of cheeses.
- Practice 5. Preparation of ice cream.

4. Academic activities

- Master classes (20 hours): sessions in which the topics of the different blocks will be explained.
- Laboratory practices (14 hours): several dairy products will be produced in the pilot plant and their quality will be analysed.
- Resolution of practical cases (9 hours) in which questions related to a specific aspect of food safety of these products will be raised. Students will have to solve these questions with the help of documents and the teacher.
- Presentation of a teaching paper (3 hours) on an innovative dairy or egg product based on a scientific article
- Visits to two dairies (4 hours)

5. Assessment system

1. Continuous Assessment

Written evaluation tests. A written test of Block I, four practical exercises of Block II, a report of Block III and two practical exercises of Block IV. The grade will account for 60% of the final grade.

Oral practical work. It will be carried out in small groups (2-3 students) and will be prepared on a topic related to a new dairy or egg product , taking into account various aspects. The grade will account for 20% of the final grade.

Evaluation of practical classes. The evaluation will be carried out through the continuous observation of the student's individual work and the evaluation of a written report of one of the practices carried out. This evaluation will account for 15% of the final grade.

Report of the visits to industries in which the student must summarize what they has learned in them. The evaluation of this report will account for 5% of the final grade.

2. Overall assessment

Students who have not chosen the continuous evaluation modality or who have not passed any of the tests, may take a final test consisting of the same evaluation activities as in the continuous evaluation. In this case, the oral practical work may be done individually.

In all evaluation activities a minimum grade of 5 out of 10 will be required to pass.