

68770 - New technologies of food processing

Syllabus Information

Academic year: 2023/24

Subject: 68770 - New technologies of food processing

Faculty / School: 105 - Facultad de Veterinaria

Degree: 631 - Master's Degree in Food Quality, Safety and Technology

ECTS: 3.0

Year: 1

Semester: First semester

Subject type: Optional

Module:

1. General information

Together with the rest of the subjects of the specialization itinerary of the master, the main objective of this subject is to provide advanced knowledge in Food Quality, Safety and Technology to students and professionals related to the food industry, contributing to promote innovation as a driving force for the development of the agri-food industry. It also gives access to the Doctoral Programme in Quality, Safety and Technology at the University of Zaragoza. This programme has an Excellence Mention and allows the student to write the thesis in the same field or in other related fields, given the wide variety of research lines offered in the doctoral programme.

These approaches and objectives are aligned with the Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (<https://www.un.org/sustainabledevelopment/es/>), specifically, the learning activities planned in this subject will contribute to the achievement of Goals 2, 4, 8, 9 and 12.

2. Learning results

1. To analyse the main advantages, disadvantages and limitations of new food processing technologies as an alternative to traditional technologies and select the most appropriate one/s for each objective.
2. To identify the main advantages, disadvantages and limitations of new food processing equipment and facilities.
3. To assess and analyse the operation and control systems of new equipment used in food processing.
4. To foresee the effects that new processing technologies have on the raw material and, as a consequence, on the quality parameters of processed foods.
5. To solve questions or problems related to food preservation, processing and packaging based on the knowledge acquired about new food processing technologies.
6. To obtain and interpret the results of a specialization work, carried out in a team, on the application of new processing technologies in the food industry and present them orally.

3. Syllabus

1. Introduction.
2. Irradiation.
3. Ultraviolet, light pulses, cold plasma.
4. High hydrostatic pressures.
5. Ultrasound.
6. High voltage electrical pulses.
7. New heating methods.
8. Combined processes.
9. New packaging systems.
10. Comparison of new technologies.

4. Academic activities

- Theoretical sessions. 18 classroom hours.
- Practical sessions and seminars. 10 classroom hours.

-Production of a specialised paper on the choice of the most appropriate emerging technology for the processing/preservation/transformation of a food.

Assessment Examination and presentation and defence of the specialised paper (2 classroom hours).

5. Assessment system

Continuous assessment

It will consist of two assessment activities, which will be assessed from 1 to 10:

Test 1: Written test (60% of the grade). A 5/10 is required to pass the subject.

Test 2: Specialised paper (40% of the grade). A 5/10 is required to pass the subject. The following aspects will be assessed:

- Correct presentation of the work in PowerPoint format, with an adequate structure, writing and bibliography.
- Critical capacity to know how to interpret the bibliography. Degree of understanding of the concepts and the ability to summarise.
- Teamwork and leadership skills
- Clarity and precision in the oral presentation of the work.

Overall test

Students who do not pass or do not complete the continuous assessment are entitled to an overall assessment test. The global assessment test will consist of a written exam including 30 multiple-choice questions and one open-ended question. The grade obtained will represent 100% of the final grade.