

30838 - Enrichment in the Fruit and Vegetables Sector

Syllabus Information

Academic year: 2024/25

Subject: 30838 - Enrichment in the Fruit and Vegetables 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, all topics related to fruit quality, marketing requirements (quality standards and control procedures) and new preservation techniques of the main fruit and vegetable groups are studied in depth. It also includes aspects related to food safety, environmental impact (types of contaminants and strategies for more sustainable production) and economic impact (analysis of the distribution chain, EU sectoral policy and differentiated quality products).

These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (<https://www.un.org/sustainabledevelopment/es/>), such that the acquisition of the learning results of the subject provides training and competence to contribute to some extent to Goals 3 (health and well-being), 4 (quality education), 6 (clean water and sanitation), 7 (affordable and clean energy) and to the achievement of Objectives 9.4 of Goal 9 (Industry, innovation and infrastructure) and Objectives 12.3, 12.4 and 12.5 of Goal 12 (Responsible production and consumption).

2. Learning results

- To know and interpret the socio-cultural factors that condition the technical evolution of production, processing, and consumption of fruits and vegetables
- To master the application of postharvest technologies for the main fruit and vegetable groups: their maturity and quality indices, preservation conditions and techniques, and the pathophysiological and pathological changes that most affect each of the groups.
- To design the flow chart for the handling, preservation, marketing and transformation into minimally processed products of the main groups of fruits and vegetables
- To explain and apply the concepts of food safety, quality and legal regulations to the production, processing and marketing of fruits and vegetables
- To identify the contaminants generated in the different processes studied.
- To properly manage waste generated in the different processes studied.
- To know and know how to explain the evolution of the area, production, production value and consumption of fruit and vegetables in Spain.
- To identify the different agents in the distribution chain and the different types of chains.
- To know and know how to interpret the context of the European market and the main Spanish foreign trade flows that define Spain's competitive position in Europe and worldwide.

3. Syllabus

BLOCK I: QUALITY, MARKETING AND STORAGE BY GROUPS OF FRUIT AND VEGETABLE PRODUCTS

Stone and pome fruits.

Small fruits.

Citrus fruits.

Tropical and subtropical fruits.

Fruiting, leafy and flowering vegetables.

Flowers, buds and herbs.

Mycology and truffle growing.

Vegetable proteins as an alternative for the development of new products.

BLOCK II: FOOD SAFETY MANAGEMENT

Post-harvest disinfection treatments.

Use of essential oils in the agri-food industry.

BLOCK III: THE FRUIT AND VEGETABLE SECTOR AND THE ENVIRONMENT

Types of contaminants generated in the production, preservation and processing of fruits and vegetables.

Techniques to reduce contamination in the production, preservation and marketing of fruits and vegetables. Zero waste: towards sustainable production.

BLOCK IV: ECONOMIC MAGNITUDES IN THE FRUIT AND VEGETABLE SECTOR.

Importance of the fruit and vegetable sector in Spain: Final Agricultural Production; surface area, employment generated and especially foreign trade and trade balance.

Analysis of the distribution chain.

EU sectoral policy.

Evolution of demand in Spain.

Products of differentiated quality.

4. Academic activities

Master classes: 20 hours. Sessions with the teacher in which the subject syllabus will be explained.

Laboratory practices: 9 hours. There will be 3 sessions of 3 hours of duration. Session 1: Optimization of disinfection techniques. Session 2: Design of post-harvest technologies. Session 3: MAP packaging design.

Problem solving and case studies: 9 hours

Visits to research organizations or companies in the sector: 12 hours.

Study and independent work: 75 hours.

5. Assessment system

Continuous Assessment

Evaluation of theoretical teaching. The evaluation of Block I will be carried out by means of an evaluation test with short questions after each topic or group of topics. The evaluation of the contents of Block II will be carried out during the session itself, by means of a short question type test with questions related to what is being explained in class. Block III will be evaluated through an individual or report in pairs. Block IV will be evaluated during the session itself, with a short question type test with questions related to what is being explained in class. For the evaluation of the theoretical teaching, the following contributions will be taken into account: 60% will correspond to the Block I test, 10% to the Block II exercises, 15% to the Block III report and 15% to the Block IV test.

Evaluation of the tutored work. It will consist of the presentation, defence and critical evaluation of a scientific publication on conservation and disinfection technologies for fruit and vegetable products.

The grade of all these activities (theoretical teaching 70% and individual tutored work, 30%) will represent 70% of the final grade (0-10) of the subject

Practical teaching evaluation and visit. There will be a group presentation of a comprehensive work of the 3 practices carried out. This presentation will include the methodology followed, the results and conclusions obtained, as well as a brief discussion. Also, a report will be made for each of the visits carried out, where the key aspects dealt with are collected, answering the questions previously provided by the teacher.

The grade for all these activities will represent 30% of the final grade (0-10) of the subject.

In all the tests a minimum grade of 5 out of 10 must be obtained. This grade will be kept in the second call of the subject if any of the parts were not passed. Attendance and participation in all programmed activities is mandatory to be eligible for the continuous evaluation modality.

Global Assessment

There will be a global test for those students who do not follow the continuous evaluation system, who have not passed any of the continuous evaluation tests or who are not satisfied with the grade of the continuous evaluation

The overall evaluation will include two tests: The first test on theoretical teaching (70% of the final grade) will include a multiple choice test, subtracting the incorrect questions, and a test with open questions. The second theoretical-practical test will include open questions and will represent 30% of the final grade. The degree of knowledge, the adequacy of the answer to the question, the coherence of the reasoning and the explanatory capacity will be evaluated.

6. Sustainable Development Goals

3 - Good Health & Well-Being

6 - Clean Water and Sanitation

12 - Responsible Production and Consumption