

**Organic Food Production**

Code: 103258  
ECTS Credits: 3

Degree	Type	Year	Semester
2501925 Food Science and Technology	OT	4	2

**Contact**

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**Use of Languages**

Principal working language: catalan (cat)  
Some groups entirely in English: No  
Some groups entirely in Catalan: Yes  
Some groups entirely in Spanish: No

**Teachers**

Elena Albanell Trullas  
Josepa Plaixats Boixadera  
Roser Sala Pallarés  
Francesc Xavier Such Martí  
Maria Dolors Izquierdo Tugas

**Prerequisites**

There are no official prerequisites to attend this course. However, it is recommended that students review the contents related to Biology and Production of Raw Materials subjects studied during the first course

**Objectives and Contextualisation**

Optional subject of 4th course that develops the scientific knowledge and the necessary techniques to achieve a sustainable agricultural activity, respectful with the environment and that allows to obtain food products in accordance with the requirements of consumers and the current agri-food industry, taking into account the legal framework of organic production.

The specific training objectives are:

- 1.- Deepening in the principles of ecological agricultural and livestock production and its environmental and socioeconomic importance.
- 2.- To know the practice of the cultivation and conservation of the main vegetable species for human and animal nutrition.
- 3.- Understand the scientific basis of animal health and welfare and its relationship with organic production.
- 4.- To know the systems of evaluation of the quality of the ecological products.

5.- To know the current regulations on the production and commercialization of organic agricultural products and the certification procedures in Catalonia and the European Union

## Competences

- Develop individual learning strategies and planning and organisation skills.
- Identify food hazards, their nature (physical, chemical, biological and nutritional), their origin or causes, their effects, and suitable methods for controlling them throughout the food supply chain so as to reduce risks to consumers.
- Search for, manage and interpret information from different sources.
- Show sensitivity to environmental, sanitary and social issues.
- Work individually or in unidisciplinary and multidisciplinary teams and in international contexts.

## Learning Outcomes

1. Apply suitable methods for monitoring the entire food supply chain in order to prevent the presence of biotic and abiotic agents in food.
2. Develop individual learning strategies and planning and organisation skills.
3. Search for, manage and interpret information from different sources.
4. Show sensitivity to environmental, sanitary and social issues.
5. Work individually or in unidisciplinary and multidisciplinary teams and in international contexts.

## Content

### THEORY

#### SECTION I

Chapter 1. Organic Agriculture.

Agroecology: foundations and strategies for sustainable agriculture. Principles of Ecological Agriculture. Introduction to organic agriculture. Differentiation between organic agriculture and other production systems for the improvement of quality.

Chapter 2. Soil and Fertilization

The soil is a living environment. Bases of fertilization in organic farming. Nutrient cycles. Organic and inorganic fertilizers.

Chapter 3. Plant Health and Protection.

Introduction. Mechanisms for the defense of plants. Agronomic, physical and biological control. Natural preparations. Other methods of control.

Chapter 4. Organic Production of Mushrooms.

Mushrooms and Bioremediation. Bases of the organic production of mushrooms: Cultivation and wild. Most important species.

Chapter 5. Organic Production of Extensive Crops.

Cereals. Grainy legumes. Importance of autochthonous varieties. Fodder crops and meadows.

Chapter 6. Organic Production of Vegetables

Importance of organic horticulture. Propagation. Spices and main varieties.

Chapter 7. Organic Production of Woody Crops.

Importance of the wine and olive tree. Citrus fruits. Fleshy fruits. Dried fruit.

## SECTION II

Chapter 8. Introduction to Organic Livestock Production.

Impact of Livestock on the environment. Integration Agriculture-Livestock. Situation of the organic livestock sector.

Chapter 9. Conversion to Organic Livestock Production.

Administrative and political support. Control of organic production. Animal welfare in organic livestock.

Chapter 10. Organic Production of Ruminants for Meat and Milk  
Management and feeding of organic livestock. Conversion of facilities and effluent management.

Chapter 11 (2 h). Organic Production of Pigs and Poultry.

Management and nutrition. Conversion of farm facilities and effluent management.

Chapter 12. (2 hr). Organic Aquaculture (fish, molluscs and algae).

Situation of the sector. Conversion to organic aquaculture production: regulation. Management and nutrition. Conversion of facilities, effluent management and welfare.

## SECTION III

Chapter 13. Quality of Organic Food.

Concept of organic food quality. Nutritional quality. Sensory quality. Environmental quality. Socio-economic quality.

Chapter 14. Organic Foods and Science

Evolution of the consumption of organic foods. Organic versus conventional foods. Conclusions of organic production.

## SEMINARS

S1. (1h). Presentation of the CCPAE

S2. (2h). Alternation and association of crops

S3. (1h). Scientific discussion on organic food

## PRACTICES

P1. (3h) Visit to an organic agriculture farm

P2. (3h) Visit to an organic livestock farm

## Methodology

The center of the learning process is student's own work. The teacher's mission to help in this learning process would be twofold. First, providing them with information and second, showing them sources where they can get it. Supervise them is essential.

Following this ideas, and according to the objectives, the development of this course is based on the following methodologies and activities:

The lectures will be the main type of activity and with them the student will acquire the basic scientific and technical knowledge of the subject. The learning contents and concepts explained during the lectures require student's autonomous work in order to assimilate them.

The seminars are sessions with a small number of students where the scientific-technical knowledge exposed to the theoretical classes are worked to complete their comprehension. The specific objective may vary depending on the type of seminar, although always seeking to promote the analysis, reasoning, discussion and resolution capacity by the student.

The objective of the technical visits is to complete, apply and reinforce the knowledge acquired in the lectures and seminars directly. They are basic to see the practical application of the concepts given during theoretical and practical lectures. From each visit students will have to prepare a report which will be given to the corresponding teaching staff for their evaluation.

The tutorial sessions aim to direct and help the students in their training to solve doubts about the contents of the subject.

## Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Participative lectures	16	0.64	1, 4, 2
Seminars	4	0.16	1, 4, 5
Technical visits	6	0.24	1, 3, 5
Type: Supervised			
Technical visit reports	5	0.2	1, 4, 5
Tutorials	5	0.2	1
Type: Autonomous			
Individual study	37	1.48	1, 2, 5

## Assessment

The evaluation of the subject will take place from the evaluations of:

Final Exam: The knowledge acquired in theory lessons and seminars by the student will be evaluated individually with a one-way multiple choice test. In this exam there will be two partial tests (one about organic foods of vegetable origin and the other one of animal origin) with a weight on the final grade of 37.5%, which can be passed if a score is  $\geq 5$ . The minimum score in each partial test for averaging the other must be 4.5. Students who do not pass any partial test will have a second recovery test.

Practices Visits are mandatory and attendance, attitude and document delivered will be evaluated. This assessment has a weight of 15% of the total grade.

Seminars. Assessment by means of a test type in relation to the content of each seminar. Seminar 2 will be evaluated on the day of the theoretical exam. The evaluation of the questionnaires of the seminars has a global weight of 10% of the final grade.

To pass the subject, it is essential to have passed the exam with a mark  $\geq 5$  and to have attended the practical sessions (visits) and seminars. Only those absences that are due for greater cause and duly justified will be accepted.

Any student who has not been presented to less than 50% of the activities described in the teaching methodology will be considered non-evaluable.

## Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exam of organic animal foods section	37.5%	1	0.04	1, 3, 4, 2
Exam of organic vegetable foods section	37.5%	1	0.04	1, 3, 4, 2
Seminars	10%	0	0	1, 4, 5
Visit reports	15%	0	0	1, 3, 4, 5

## Bibliography

- Bello A. Jordá C. Tello J.C. 2010. Agroecología y producción ecológica. Ed. CSIC.
- DAAR 2006. Llibre blanc de la producció agroalimentària ecològica a Catalunya. Departament Agricultura, Alimentació i Acció Rural. <http://www.slideshare.net/roserpera/llibre-blanc-pae>
- IFOAM 2010. Organic Aquaculture: EU Regulations (EC) 834/2007, (EC) 889/2008, (EC) 710/2009. Background, Assessment, Interpretation. A. Szeremeta, L. Winkler, F. Blake, P. Lembo (Eds). EFOAM-EU Group and CIHEAM. 36 pp.  
<http://ifoam-eu.org/positions/publications/aquaculture/>
- IFOAM 2012. Los Reglamentos Europeos para la Agricultura y Alimentación Ecológica. <http://ifoam-eu.org/>
- Lampkin N. 1998 (1 Ed.) Agricultura ecológica. Ediciones Mundi-Prensa. Madrid.
- Mainardi Fazio F. 2003 (1 Ed.) Cultivo biológico de hortalizas y frutales. Ed: de Vecchi
- Labrador J., Porcuna J.L., BELLO A. 2002. Manual de Agricultura y ganadería ecológica. Ediciones Mundi-Prensa. Madrid.

### Web links

<http://ccpae.org>

[http://ec.europa.eu/agriculture/organic/home\\_es](http://ec.europa.eu/agriculture/organic/home_es)

<http://ifoam-eu.org/>

<http://www20.gencat.cat/portal/site/DAR/menuitem>