

28942 - Ruminant production

Syllabus Information

Academic year: 2023/24

Subject: 28942 - Ruminant production

Faculty / School: 201 - Escuela Politécnica Superior

Degree: 583 - Degree in Rural and Agri-Food Engineering

ECTS: 6.0

Year: 4

Semester: First semester

Subject type: Optional

Module:

1. General information

The main objective of the Ruminant Production subject is for the student to understand, in a critical and reflexive way, the basic aspects that affect the management and production of ruminants. In particular, we will go into the aspects of reproduction, growth, lactation, feeding, genetics and facilities that allow optimizing the production of farms from a technical-economic point of view. The aim is that students can contribute to the improvement of ruminant production by searching for efficient production systems at a technical-economic level, and by using production techniques that respect the environment and animal welfare. The subject will be divided into blocks by species and productive orientation. Each block will cover from the legislative and general framework to the productive aspects and the associated technologies that allow optimizing, from a technical-economic point of view, the production of farms within a sustainable framework.

Alignment with the SDGs:

The approaches and objectives of the subject are related to the following Sustainable Development Goals (SDGs) of the 2030 Agenda:

- Goal 2: Zero hunger
- Goal 9: Industry, innovation and infrastructure
- Goal 12: Responsible production and consumption

and, in particular, with the targets:

- Target 2.4. By 2030, ensure the sustainability of food production systems and implement resilient agricultural practices that increase productivity and production, contribute to the maintenance of ecosystems, strengthen resilience to climate change, extreme weather events, droughts, floods and other disasters, and progressively improve soil and land quality
- Target 9.4. By 2030, upgrading infrastructure and converting industries to be sustainable, using resources more efficiently and promoting the adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
- Target 12.4. By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse effects on human health and the environment.

2. Learning results

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

1. To know and describe the general situation of the ruminant production subsectors. Analyze their current situation, their problems and future prospects.
2. To understand and explain the criteria to be used to choose a specific animal base and the most suitable production system in specific situations. Define the production objectives in each case to optimize the production yields of the system.
3. Know and describe each of the phases of the production cycles and the care to be provided to animals regarding their physiological, nutritional and environmental needs.
4. Formulate and evaluate rations for feeding ruminants in different phases and production systems.
5. To know and compare the design and organization of selection and crossbreeding programs used in the improvement of ruminant species.
6. To understand and explain the most important elements that influence animal health and welfare to ensure their protection and optimize their production.
7. To know the quality and safety criteria of the main animal products obtained from ruminants. Identify the variation factors that affect the production and quality of these products.
8. To know the legal and productive criteria for the design of housing and facilities for ruminants. Know and contrast the most

frequently used equipment.

9. Understand and explain the fundamentals of livestock enterprise organization and management in domestic ruminant species.

10. To provide scientific and technical advice to producers, the food industry and consumers on aspects related to ruminant production.

3. Syllabus

Theory Program

Block I. Beef cattle

Topic 1 Description of the bovine sector

Topic 2 Cow meat farming-1

Topic 3 Cow meat Farm-2

Topic 4 Rearing and fattening of calves in intensive regimes

Topic 5 Beef carcass quality

Block II Dairy cattle: 12 hours.

Topic 6 Dairy Cow Farming

Topic 7 Reproductive management and genetic improvement in dairy cattle

Topic 8 Dairy cow feeding

Topic 9 Lactation and milking

Block III Sheep and goat production: 19h

Topic 10 Description of the sheep and goat sector

Topic 11. Meat sheep farm-1

Topic 12 Sheep meat production-2

Item 13 Dairy sheep farming.

Topic 14 Sheep feeding

Topic 15 Goat farming

Practice program:

Practice 1: Visit to a beef cattle farm

Practice 2: Ration formulation in ruminants-1

Practice 3: Ration formulation in ruminants-2

Practice 4: Visit to a dairy cattle farm

Practice 5: Visit to a sheep meat farm

Practice 6: Visit to a dairy sheep farm

4. Academic activities

Participative lectures 40 hours dedication.

2. Practical classes: visits to farms and practices on ration formulation: 20 hours of dedication.

3. Study for the written test and completion of assignments. For a better follow-up of the learning process, will encourage students to use tutoring hours. 86 hours of dedication.

4. Passing the written test: 4 hours dedication.

5. Assessment system

1. Performance of a practical test on formulation. This test will consist of a single question that will be graded out of 2 points and the students will be able to use the material they deem appropriate. . Students who pass this test may choose to take an exam at the end of the term only on the remaining contents of the course, which will add the remaining 8 points to the grade

2. A written test at the end of the course, in the first and second call, on the contents exposed in the theoretical and practical classes. This test will consist of 10 short questions, which will be graded each one out of 1 point. The grade obtained will represent 100% of the overall grade for the subject.

A minimum of 5 points is required to pass the subject.

The success rates for the subject in the last three years are: 2019/20: 75,00%; 2020/21: 66,67%; 2021/22: 100%