

Genetic Improvement in Animals

Code: 100957
ECTS Credits: 6

Degree	Type	Year	Semester
2500253 Biotechnology	OT	4	0

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

Armand Sánchez Bonastre
Marcelo Amills Eras
Yulixaxis Ramayo Caldas

Prerequisites

There are no specific prerequisites for students, but it is recommended:

- To know fundamental concepts of Mendelian genetics, molecular genetics and biostatistics
- Be able to read scientific works in English
- Be able to use basic bioinformatic tools

Objectives and Contextualisation

Animal Breeding is an optional subject with 6 ECTS of the first semester, within the first course of the Degree in Biotechnology. The students will learn the theoretic and practical knowledge which will allow them to participate in the genetic management of domestic animals using molecular and genomic tools, both in conservation programs, control of diseases, selection and animal breeding and biotechnological production.

The specific goals of formation are:

- To know how to measure and quantify the genetic variability of populations.
- To understand the inheritance of quantitative and multifactorial traits.
- To know the methods of analysis of the genomes of domestic animals.
- To acquire the knowledge of how to identify and analyze genes related with complex traits and how to apply them to the genetic improvement of animals.
- To know the bioinformatic tools required for the analysis of the animal genome.

- To introduce the knowledge to apply reproductive methodologies in the animal breeding.
- To know the strategies of biotechnological production in domestic animals.

Content

The general content of the subject, distributed in blocks, is the following:

Block 1. Study of the animal populations and the complex and quantitative traits.

Block 2. Characteristics of the genetic animal breeding.

Block 3. Analysis of the genetic variability in animals.

Block 4. Analysis of the animal genome.

Block 5. Detection of hereditary pathologies in domestic animals.

Block 6. Biotechnology applied to domestic animals.

In addition, the student will learn the use of molecular genetics techniques for animal identification and paternity tests, the molecular determination of hereditary pathologies and the application of bioinformatic tools for genetic animal breeding. The student will solve problems through a work in the laboratory and the analysis of the obtained data. This part of the subject is structured in 4 sessions of 3 hours in the laboratory and informatic data analysis.

It is required to see the general program of the course in the web page of the Biosciences Faculty (<http://www.uab.cat/biociencias/>)

It is required to see the virtual space located at the Campus Virtual de la UAB (<https://cv2008.uab.cat/home/>)