

Genetic diversity and population management

ECTS

3

Mots clés

Genetic resources, Selection, Management, Sélection, Breeding, Ressources génétiques, Animal, Amélioration génétique, Gestion, Populations

Description du contenu de l'enseignement

Objectifs:

The goal is to make students familiar with concepts and methods used in genome analysis and to have a good view of the complexity of the structural and functional genome variations.

Contenu:

Animal Genomes can be studied in various scientific contexts. This module is intended to show a large range of them. Genome analysis will be presented in order to identify the genetic regions undergoing selection (signatures of selection) Linkage and association are used to relate pedigree and genomic information to the presence of a QTL for a given trait. Information brought by linkage and association and, how statistic methods exploit these information will be described. Genome variabilities, both structural and functional, will also be presented at the molecular level, to underline their impact on cellular and individual phenotypes. Practical uses of these sources of variations by scientists and breeders will be highlighted.

Compétences à acquérir

- To state the concepts of population genetics and to infer an analysis of genetic variability within and between populations.
 - To develop the approaches and methods to define breeding goals.
 - To know the principles, methods and organization of a breeding program and to be able to assess its efficiency.
- To state basic and advanced concepts in populations genetics. To be familiar with principles and methods implemented to define breeding goals and to develop a breeding program.

Modalités d'organisation et de suivi

Coordinateurs:

Etienne Verrier (PR AgroParisTech)

Equipe pédagogique:

Frédéric Hospital (DR INRA), Florence Phocas (DR INRA), Gwendal Restoux (MC AgroParisTech), Etienne Verrier (PR AgroParisTech)

Langue

Anglais

Volume horaire

CM : 26h, TD : 13h

Période et lieu(x) enseignements

Période:

octobre-décembre

Lieu:

Paris- Jouy en josas

Mode de contrôle des connaissances

Assignments, oral presentation, participation