

Faculty of Biological, Agronomic and Environmental Engineering

BIR1324 Animal physiology

[30h+7.5h exercises] 3 credits

This course is taught in the 1st semester

Teacher(s): Cathy Debier, Isabelle Donnay
Language: French
Level: First cycle

Aims

The course of animal physiology follows a double objective. First, the acquisition of basic concepts of animal physiology and second, the preparation to the courses of animal production and zootechny. Through its fundamental dimension, the animal physiology has a major impact on the production, both for quality as for quantity. It also influences the animal's reaction to its environment and the impact of the animal on the latter. The objective of the course is therefore, starting from the fundamental concepts of physiology, to enlighten these different dimensions.

Main themes

The course sets the accent on the physiology of the main rent animals, which are the cow, the hog and the sheep. Three themes are studied: anatomy and physiology of reproduction, anatomy and physiology of digestion and the physiological bases of lactation. A particular attention is set on endocrinology and on the hormonal regulation. The circulatory, respiratory and renal systems are also described. The consequences on the organization of the production are approached in the perspective of the course of animal production.

Content and teaching methods

Contenu :

1. Endocrinology and hormonal regulation : description of the structure and mechanisms of action of hormones, hormonal receptors and dosages. Hypothalamus-hypophysis axis: hormones of the adenohypophysis and neurohypophysis. Thyroid hormones. Hormonal regulation of Calcium. Adrenal glands: corticoids and catecholamins. Hormonal regulation of glycemia.
2. Anatomy of the genital tract and physiology of reproduction: Anatomy of the male and female genital tracts. Spermatogenesis. Ovogenesis. Fertilization, embryonic development and implantation. Hormones of reproduction. Oestrous cycles in domestic mammals. Physiology of lactation: control of mammogenesis, lactogenesis and galactopoiesis.
3. Anatomy and physiology of digestion: Comparative digestive physiology (carnivores, omnivores and herbivores). Anatomy and functional morphology of monogastrics and polygastrics (livestock and free-ranging). Digestive functions and annex glands : global overview of secretions, motility and absorption. Forestomachs motility as well as feeding and merycic behaviour of ruminants.
4. Exercises : practical exercises focus on the study of the anatomy of digestive tract of a monogastric and a polygastric as well as on the comparative feeding and merycic behaviour of ruminants.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Pré-requis: Basis in embryology, physiology, cell and molecular biology as well as biochemistry

Evaluation: Oral examination with written preparation

Support: Powerpoint files accessible on the intranet via iCampus

Other credits in programs

BIR13BA/A	Troisième année de bachelier en sciences de l'ingénieur, orientation bioingénieur (option : agronomie)	(3 credits)	Mandatory
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