

ACADEMIC YEAR: 2016-2017

COURSE: **LIVESTOCK SPECIAL**

TYPE OF EDUCATIONAL ACTIVITY: Characteristic

TEACHER: **Prof. Emilio GAMBACORTA**

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Language: Italian

n. CFU: 8
(7 Lectures + 1 practicals)

n. of hours: 72
(56h lesson and 16h
tutorials/practice)

Campus: Potenza
Dept./School: Scuola di Scienze
Agrarie, Forestali, Alimentari
ed Ambientali (SAFE)
Program: LM 69 Science and
Agricultural technology

Semester: II

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The course will provide the student with an overview of the components of the livestock system. The knowledge of the weight of the different factors, will allow the student to define appropriate levels of resource utilization, even in relation to production (milk, meat...) and to qualitative improvement of productions. Through an analysis of the production unit, separately for genetic type and breeding system, students can define the productive value, using efficiency indices.

The main provided knowledges are :

- *role and importance of animal production on Gross Domestic Product;*
- *role and importance of environmental factors breeding and reference elements for the definition of livestock systems ;*
- *morpho-functional characteristics of zootechnical animals in relation to their productive aptitudes;*
- *animals performance in relation to breeding technique;*
- *lactogenesis, milk ejection, and modeling of the galactopoiesis function;*
- *modeling of the miopoiesis, meat quality;*
- *feeding management in relation to the food origin;*
- *identification of livestock production unit and energy production costs;*
- *breeding technologies;*
- *impact of livestock production unit on environment of breeding;*
- *animal's role and its management for the conservation of soil fertility.*

At the end of the course students will be able to:

- *assess the aptitude or productive specialization and define the physiological efficiency indices;*
- *assess the aptitude to grazing of herbivores;*
- *assess the sustainability of the livestock farm;*
- *assess the production efficiency for milk and meat;*
- *define the energy costs of production in the livestock production unit;*
- *define the livestock contribution on conservation of soil fertility and on environment conservation.*

PRE-REQUIREMENTS: No requirement.

SYLLABUS

The group is divided in 8 teaching blocks.

Block 1. (8h, lectures):

Importance of animal production, even in relation to Gross Domestic Product; morpho-functional characteristics of ruminants of zootechnical interest, their classification in relation to productive aptitudes; and their distribution and consistency on nationwide.

Block 2. (8h, lectures)

Morpho-functional characteristics of no-ruminants of zootechnical interest, their classification in relation to productive aptitudes; and their distribution and consistency on nationwide.

Block 3. (8h, lectures)

Galactopoiesis: lactogenesis and milk ejection, chemical composition of colostrum and milk, modeling of the individual milk production and factors that influence it (genetic type, age, season of birth, production...). Definition of sustainability of production activities; of energy costs of production, and of production unit value.

Block 4. (8h, lectures)

Miopoiesis: - general aspects; - growth and development; determinant factors: genetic type, production type, initial condition, operational phase, feeding; meat quality: reological parameters; energy costs of production; production unit value.

Block 5. (8h, lectures)

Breeding of dairy cattle: factors responsible of variations: Climatic, meteorological, alimentary, emotional, operational, social; structure and breeding techniques; Milking systems. Definition of livestock sustainability and of production unit value.

Block 6. (8h, lectures)

Breeding of meat cattle: factors responsible of variations: - genetic type (milk, meat, milk and meat, cross); - production type; initial condition; operational phase; feeding; breeding system. Definition of livestock sustainability and of energy costs of production.

Block 7. (8h, lectures)

Breeding technology of sheep and goat: milk production; meat production; breeding system. Breeding technology of pig: production type; breeding system. Notes on breeding technology of equine.

Block 8. (16h, Practical activity)

In the classroom: vision, description and consideration on Genetic Types covered during the course; implementation of case studies.

In the laboratory: chemical analysis of meat, milk and feed composition; physical analysis: color, drip loss, texture ecc.. There will be some in-depth seminars on specific topics and technical visits to livestock farms.

TEACHING METHODS

The course is based on 8 teaching blocks and it includes 56 h lectures and 16 h practical tutorials, concerning exercises in the classroom, laboratory and technical visits to livestock farms and food processing industries. There will be some in-depth seminars on specific topics.

EVALUATION METHODS

The assessment will be made through continued interaction with students during the lessons. The examination consists in an oral presentation related to an elaborate in-depth written about a Genetic Type and various topics discussed and dealt with during the course.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

BALASINI D., - *Bovini e bufalini*. Edagricole, Bologna, 2000.

BALASINI D., - *Ovicaprini*. Edagricole, Bologna, 2000.

BALASINI D., *Suini*. Edagricole, Bologna, 2000.

BALASINI D., *Equini*. Edagricole, Bologna, 2000.

GRAU R., *Scienza della carne*. Edagricole, Bologna, 1984.

BETTINI T.M., - *Elementi di Scienza delle produzioni animali*, Edagricole, Bologna, 1987.

SUCCI G., - *La vacca da latte*, Città Studi, Milano, 1993.

PARIGI BINI R., - *Le razze bovine*, Patron, Bologna, 1983.

PARIGI BINI R. e SAMEDA DE MARCO A., – Zootecnica speciale dei bovini: 1. Riproduzione, Patron, Bologna, 1986.

PARIGI BINI R. e SAMEDA DE MARCO A., – Zootecnica speciale dei bovini: Produzione della carne, Patron, Bologna, 1989.

ANTONGIOVANNI M., e GUALTIERI M., Nutrizione e alimentazione animale. Edagricole, Bologna, 1998.

BORGIOLI E., Genetica e miglioramento degli animali agricoli. Edagricole, Bologna, 1993.

- Dispense del Docente
- <https://iaassassari.com/dispense/...agro-zootecniche/zootecnica-speciale-i-ruminanti/><https://www.google.it/>

INTERACTION WITH STUDENTS

At beginning of the course the lecturer will explain to students the pre-requirements needed, the educational goals, the expected learning outcomes, the course syllabus (structure/organization), the evaluation methods and the reference textbooks. Subsequently the students who will attend assiduously the course are asked for their surname, name, telephone number, registration number and E-mail. Simultaneously it is given indication that the teacher contacts are provided on the UNIBAS website.

The lecturer will be available to receive students on Monday and Wednesday (16.00-19.00) in his study and/or even in other days, preferably after an E-mail contact.

EXAMINATION SESSIONS (FORECAST)¹

21/06/2017, 19/07/2017, 20/09/2017, 18/10/2017, 15/11/2017, 20/12/2017, 18/01/2018, 21/02/2018, 21/03/2018, 18/04/2018

SEMINARS BY EXTERNAL EXPERTS SI NO

EVALUATION COMMITTEE

Prof. Emilio Gambacorta (President), Prof.ssa Annamaria Perna (member), Prof. Pierangelo Freschi (replacement member).

¹ Subject to possible changes: check the web site of the Teacher or the Department/School for updates.