SCUOLA DI SCIENZE AGRARIE, FORESTALI, ALIMENTARI ED AMBIENTALI

COURSE: Animal Production			
ACADEMIC YEAR: 2017-2018			
TYPE OF EDUCATIONAL ACTIVITY: Affine			
LECTURER: Ada Braghieri			
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Language: Italian			
ECTS: 9 (8 Lectures + 1 seminars, farm and laboratory practice)	n. of hours: 64 h lectures + 16 h practise	Campus: Potenza Dept./School: School of Agriculture, Forest, Food and Environmental Sciences (SAFE) Program: L26 Food Technology	Trimester: 3

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

Starting from the assumption that the knowledge of how the primary goods are produced is important for the proper processing of the production chains, the course aims to prove information concerning the main animal products from different livestock species and the factors affecting their quantitative and qualitative characteristics. On this purpose, some aspects of animal husbandry (e.g. management and feeding) and physiology will be addressed, as well as practices related to the other phases of the production chain. In addition, different instrumental and sensory analyses of animal products will be considered.

- **knowledge and understanding:** Knowledge of the production and consumption of the main animal-based products. Knowledge of different breeding and keeping systems, in relation to the species and the product. Knowledge of species and breeds with specific production attitudes. Knowledge of quantitative aspects of animal production. Knowledge of product classifications. Knowledge of the qualitative characteristics of milk, meat and eggs and the methods used to evaluate them. Knowledge of factors that can affect and modify quanti-qualitative characteristics of productions. Knowing the determinants of consumer choices and preferences for animal-based products.
- **applying knowledge and understanding**: Ability to analyze the primary phases of the production chain and identify possible criticalities that may compromise the product, from a quanti-qualitative point of view. Ability to choose the most appropriate techniques in relation to the type of product and aspect considered. Ability to analyze, in relation to the product, determinants of consumer choices and preferences.
- **making judgements**: At the end of the course, students will be able to understand the best technical choices for improving the nutritional and sensory properties of animal productions employing processes that respect animal welfare and sustainability, from an environmental and economic point of view. They will also to be able to develop and argue, in a critical and autonomous way, an elaborate work to be presented at the graduation.
- **communication skills**: Ability to communicate the acquired and elaborated knowledge about the production chains and the quality of the animal-based products to both non-technical and technical audiences. Ability to exhibit, synthetically and effectively, using appropriate scientific and technical terms, a finalized final work on an issue of animal food during the graduation thesis.
- **learning skill**: In addition to the frequency of the lessons, students will be able to deepen their knowledge on animal production by accessing articles on magazines or specialized texts, also written in a foreign language, and attending seminars or specialized conferences.

PRE-REQUIREMENTS

To understand the material presented in this course the following knowledges and skills are needed: basic concepts in general and organic chemistry, biochemistry and food chemistry.

SYLLABUS

The group is divided in 9 blocks.

Block 1. Through the course attendance and the individual study on notes distributed throughout the course, student acquire theoretical elements about: the relevance of animal-based products in the agri-food industry; national

production and consumption of animal-based products; notes on the physiology of reproduction; breeding of young animals (Colostrum function and composition, natural lactation vs. artificial lactation, weaning); management (breeding and keeping systems in the various species of zootechnical interest).

Block 2. Attitudinal types (milk, meat and wool production type); Notes on udder morphology and physiology; Lactation physiology; Lactating curves in various animal species; Milking techniques and preservation of milk ; Genetic types with higher aptitude for milk production; Cattle (Frisona, Bruna, Jersey, Reggiana, and Pezzata Rossa breeds); Sheep (Sardinian, Comisana, and Massese breeds); Goats (Alpine and Mediterranean Breeds).

Block 3. Through the frequency of the lessons and the individual study on notes distributed throughout the course, students acquire theoretical elements related to: Chemical and nutritional composition of milk ; Mycotoxins in milk; Sensory properties and their evaluation; Dairy remediation and possible modifications of the milk nutritional and organoleptic properties; Factors affecting the quanti-qualitative production of milk; Breeding and production of water buffalo.

Block 4. Through the frequency of lessons and the individual study on notes distributed throughout the course, students acquire theoretical elements related to meat production. Different meat production systems. Animal rearing and finishing, slaughter, carcass evaluation and dissection. Carcass yields.

Block 5. Genetic types used for the production of meat; Cattle, Pig , and Sheep breeds reared for meat production.

Block 6. Meat Qualitative characteristics (nutritional, physical and sensory properties). Methods of their assessment. Factors affecting meat quality. Notes on classification of livestock feed and conservation methods (hay, drying and silage).

Block 7. Egg laying hens- Egg production and quality - Broilers and turkeys farming- Egg composition, classification and labeling methods - Methodologies for the sustainability assessment of livestock production systems and eco-labels.

Block 8. Principles and techniques of sensory evaluation - Organic Animal Husbandry (Principles, Legislation, Certification, Quality of Organic Products) - Principles on animal welfare and animal welfare assessment on farm - Food Labeling.

Block 9 (practice). Through practical training and technical visits to specialized farms, students acquire the practical elements for analyzing factors affecting livestock production from the qualitative point of view and the methodologies to be used for the assessment of the quality of animal-based products.

TEACHING METHODS

The course includes 64 h lectures and 16 h practice (laboratory and farm visits). During the practice the students will be divided into groups to perform various tests related to the sensory and qualitative analysis of the animal-based products. Through technical visits to livestock farms, they can practically verify the theoretical principles learned during frontal lessons.

EVALUATION METHODS

Learning will be verified during three oral tests: two throughout the course and one at the end. Each test is successfully passed with a minimum score of 18/30. The final vote is given by the average of the votes given in the three trials.

Failure to pass the first intermediate test does not preclude participation in the second intermediate test.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

Course material and handouts will be provided in electronic format during the course and temporarily stored on a document cloud which will made accessible to the student.

The students are also encouraged to widen their knowledge using textbooks:

ALLEVAMENTO DEI BOVINI E DEI SUINI- Monetti P. G**. - Città di Castello (PG), Girali, 2001**

ZOOTECNICA SPECIALE. ADALBERTO FALASCHINI. Edagricole, Bologna.

VACCA DA LATTE - Succi G. Hoffmann I. **-** Editore: **CITTA STUDI**

LA MUNGITURA, IL LATTE DALLA MAMMELLA ALLA RACCOLTA - GOTTSCHALK A. Edagricole, Bologna.

SCIENZA DELLA CARNE -Autore: Lawrie R. Andrew; Ledward D. - Editore: Il Sole 24 Ore Edagricole;

IMPROVING THE SENSORY AND NUTRITIONAL QUALITY OF FRESH MEAT - J.P. Kerry and D.A. Ledward Woodhead

Publishing Series in Food Science, Technology and Nutrition;
IL MANUALE DEL BIOLOGICO - Caccioni D. e Colombo L.- Il sole 24 ore EDAGRICOLE.

INTERACTION WITH STUDENTS

During the first lecture, the structure and organization of the course and the evaluation procedure will be presented. The teaching material will be made available to students using a cloud storage system (Dropbox) or made available on a pen drive.
Office hours: generally, on Wednesday and Thursday from 15:30 to 17:30 in the teacher's study.
In addition to the weekly reception, the teacher will be available by e-mail.

EXAMINATION SESSIONS (TENTATIVE)[1]

03/10/2018; 14/11/2018; 12/12/2018; 16/01/2019; 20/02/2019; 20/03/2019; 17/04/2019; 22/05/2019; 26/06/2019; 09/07/2019; 23/07/2019; 17/09/2019

EVALUATION COMMITTEE

Prof. Ada Braghieri (president), Prof. Fabio Napolitano (member), Prof. Corrado Pacelli (member).

SEMINARS BY EXTERNAL EXPERTS YES X NO

FURTHER INFORMATION

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