

## **Animal raw materials (IIInd Year of study, IIIrd Semesters)**

**Credit value (ECTS) 5**

### **Course category**

Specialized (Imposed)

### **Course holder:**

**PhD, Prof. Ioan GÎLCĂ**

### **Discipline objectives (course and practical works)**

The course and practical work will follow the general objective:

- Knowledge of modern technologies for the exploitation of the main species of interest to obtain livestock products in terms of quality and economy

Specific objectives, the course and practical work will be pursued:

- Familiarize students with the technologies of animal breeding
- Deepening breeding technologies and animal exploitation in order to achieve growth in terms of economy and quality of key livestock production
- Acquiring concepts relating to genetic improvement, biotechnology breeding and nutrition so that future professionals to become involved in obtaining quality animal products

### **Contents (syllabus)**

| <b>Course (chapters/subchapters)</b>  |
|---|
| Physiology of animal production (milk production physiology, physiology of meat production, egg production physiology)  |
| Breeding of domestic animals (Male and female genital; Sexual manifestations in domestic animals; Breeding indices.).   |
| Increasing youth (Tracking the growth process; Factors influencing the growth process; Basics orientation growth).  |
| Improving domestic animals - Improvement principles; Selection of animal mating systems (matching pairs); Breeding methods; Breeding value estimation.  |
| Animal hygiene (Animal housing hygiene; Getting veterinary prophylaxis)   |
| Technology growth and exploitation of cattle (Cattle situation and developments; Cattle breeds, Cattle breeding technique; Techniques for the young bulls; Technical exploitation of cattle for milk production, Exploitation technique cattle for meat production; Breeding cattle). |
| Technology growth and exploitation of sheep (Situation and evolution of sheep; Sheep breeds; Sheep breeding technique; Technical growth and exploitation of sheep; Modern techniques of exploitation of lactating sheep. Sheep Breeding).   |
| Technology growth and exploitation swine (Situation and evolution of pigs' growth; Breeds of pigs; Pig breeding technique; Techniques for the pigs by age; Modern techniques of fattening pigs for meat and bacon; Breeding pigs).  |
| Breeding technology and exploitation of birds (Poultry situation and developments; Breeds of birds; Breeding and improvements birds engineering; Engineering operation hybrids hen eggs and meat).  |

| <b>Practicum</b>   |
|--|
| Labor protection in animal farms and laboratories for analyzing the quality of animal products |

|   |
|---|
| Technical of approach and restrained animals. Individualization animals. Exterior appreciation in domestic animals. Measurements in domestic animals. Artificial insemination in domestic animals. The calculation of body indices. |
| Romanian cattle breeds. Cattle evaluation marks and ranking. Estimating breeding cattle and breeding work in cattle farms   |
| Control of quantity and quality of milk production in cattle. Control of meat production in cattle. Appreciation of the live animal fattening.  |
| Breeds and varieties of sheep from Romania. Evaluation marks and ranking sheep breeding. Control of production of milk and meat insheep   |
| Breeds of pigs in Romania. Technical assessment of breeding pigs. Production control of meat in pigs.   |
| Main breeds of chickens and hens and broiler hybrids exploited in Romania. Control incubation process. Appreciation of egg production and egg quality. Appreciation at meat production of hen hybrids.                              |
| Technological flow analysis in cattle farms.  |
| Technological flow analysis in sheep farms.   |
| Technological flow analysis in swine farms.   |
| Technological flow analysis in poultry farms.   |

### Bibliography

- Boișteanu P.C. și colab. - Bazele morfofiziologice ale producției de carne. Edit. Ion Ionescu de la Brad, Iași, 2015
- Gilcă I., Dragotoiu D. - Tehnologii de creștere și exploatare a animalelor. Edit. ECA București, 2003
- Gilcă I. - Zootehnie generală. Edit. "Ion Ionescu de la Brad", Iași, 2016
- Gilca I.– Tehnologia creșterii animalelor. Edit. "Ion Ionescu de la Brad", Iasi, 2016
- Gilcă I.–Materii prime animale. Edit. "PIM", Iași, 2016
- Maciuc V. – Managementul creșterii bovinelor. Edit. ALFA, Iași, 2006
- Mărgărint Iolanda și colab. - Fiziologia animalelor, Edit. Ion Ionescu de la Brad, Iași, 2002
- Pascal C. - Creșterea ovinelor și caprinelor. Edit. PIM- Iași, 2007
- Păsărin B. - Creșterea suinelor, Edit. "Ion Ionescu de la Brad", Iasi, 2005
- Tărăboanță Gh. și colab. - Zootehnie. Ed. Did. și Pedag., București, 1981
- Usturoi M.G. – Creșterea păsărilor. Edit. "Ion Ionescu de la Brad", Iasi, 2008
- Usturoi M., G. – Tehnologia laptelui si a produselor derivate. Edit. ALFA, Iași, 2007
- Vacaru-Opriș I. – Tratat de avicultură. Edit. CERES, București, 2007

### Evaluation

| Evaluation form                                  | Evaluation Methods   | Percentage of the final grade |
|--|--|-------------------------------|
| Exam   | Oral examination   | 60%                           |
| Appreciation of the activity during the semester | Oral assessment during the semester, verification tests and final laboratory colloquium. | 40%                           |

### Contact

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## **Animal raw materials – part II (IIInd Year of study, IVth Semester)**

**Credit value (ECTS) 3**

### **Course category**

Domain (Imposed)

### **Course holder:**

**Assist. Prof. PhD. Cătălin Emilian NISTOR**

### **Discipline objectives (course and practical works)**

Acquiring the knowledge necessary for the qualitative assessment of animal raw materials:

- knowledge of the elements that define the quality of animal raw materials
- knowledge of quality conditions specific to meat and meat preparations
- knowledge of specific quality conditions for fish and fish dishes
- knowledge of the quality conditions specific to milk and milk products
- knowledge of general technologies for obtaining and conditioning eggs, egg products and fatty liver
- knowledge of the composition and properties of table eggs, egg products and fatty liver

### **Contents (syllabus)**

| <b>Course (chapters/subchapters)</b>   |
|--|
| Quality of animal raw materials  |
| General and specific health rules in food establishments (Control of meat. Control of meat products. Control of meat products. Control of canned meat. Control of game. Control of fish and fish products. Control of milk and dairy products. Control of eggs)  |
| Meat and meat products (Trophic-biological importance of meat. Classification of meat and meat products. Normal and abnormal transformations of meat. Composition, characteristics and properties of meat. Cutting of carcasses. Defects in meat, meat products and preserves)   |
| Fish and fish products (Trophic-biological value of fish and fish products. Classification of fish and fish products. Changes in fish meat after fishing. Chemical composition of fish meat. Quality conditions for: fresh fish-frozen fish -smoked fish-salted fish-caviar. Defects of salted fish. Defects of smoked fish) |
| Milk and dairy products (Trophic-biological value of milk and dairy products. Classification of dairy products. Quality conditions of dairy products. Defects in dairy products)   |
| The importance of eggs, egg products and fatty liver in the human diet   |

| <b>Practicum</b>  |
|---|
| Safety rules in food industry and public food service   |
| Quality control of meat and meat products (Collection and preparation of samples for analysis. Sensory examination. Physico-chemical examination: water; proteins; fats; minerals; pH value; sodium chloride; ammonia; hydrogen sulphide; peroxidase; nitrites) |

Quality control of fish and fish products (Collection and preparation of samples for analysis. Sensory examination. Physico-chemical examination: water; proteins; fats; pH value; salt; ammonia; reductase; peroxidase; coefficient)

Quality control of milk and milk products (Collection and preparation of samples for analysis. Assessment of freshness: acidity; pH value. Physico-chemical examination: dry matter; water; casein; fat; salt. Microbiological examination. Identification of counterfeits. Identification of preservatives / neutralizing

## References

1. Apostu S., 2010 – Analiza senzorială a alimentelor. Editura Risoprint, Cluj-Napoca..
2. Banu C. și colab., 2007-*Calitatea și analiza senzorială a produselor alimentare*. Editura Agir, București.
3. Banu C. și colab., 2013 – Industria alimentară între adevăr și fraudă. Editura Asab, București.
4. Gabriela Râpeanu, 2010 – Controlul falsificării produselor alimentare. Tehnici și analize de laborator, Editura didactică și Pedagogică, București
5. Nistor C.E., Păsărin B., 2017 - Calitatea nutrițională și tehnologică a păstrăvului de cultură, Editura Performantica, București.
6. Stănescu V. și Apostu S., 2010 - *Igiena, inspecția și siguranța alimentelor de origine animală* (vol. I, II și III). Editura Risoprint, ClujNapoca.
7. Păsărin, B., 2013 – *Elemente de control și expertiză în prelucrarea peștelui*. Editura "Ion Ionescu de la Brad", Iași.
8. Usturoi M.G., 2012-*Controlul laptelui și a produselor derivate*. Editura PIM, Iași.
9. Usturoi M.G., 2013-*Controlul calității alimentelor*. Editura PIM, Iași.

## Evaluation

| Evaluation form                                  | Evaluation methods   | Percentage of the final grade |
|--|--|-------------------------------|
| Exam   | Written examination  | 70%                           |
| Appreciation of the activity during the semester | Oral assessment during the semester, verification tests and final laboratory colloquium. | 30%                           |

## Contact

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