

*Federal State Autonomous Educational Institution of Higher Education "Peoples' Friendship
University of Russia"*

Agricultural Technology Institute

Recommended by MCSD

WORKING PROGRAM OF DISCIPLINE

Name of discipline The main stages of the formation of the animal organism

Recommended for training / specialty

36.06.01 "Veterinary and animal science".

Program focus (specialization)

06.02.01 "Diagnosis of diseases and therapy of animals, pathology, oncology and morphology of
animals"

06.02.02 "Veterinary microbiology, virology, epizootology, mycology with mycotoxicology and
immunology"

06.02.10 "Private zootechnics, technology for the production of animal products"

1. Goals and objectives of the discipline:

The purpose of the discipline in the preparation of graduate students is to give graduate students basic morphological knowledge on the development of tissues and organs in postnatal ontogenesis, which form the meat productivity of animals

Objectives of the subject :

- acquaintance of graduate students with modern trends and methodological approaches used in morphology to solve problems of increasing animal productivity in different age periods;
- study the movement of matter (more developed tissue in the carcass), as a form of development of the body;
- an in-depth study of the development and growth of organisms of various types of industrial animals, will make it possible to draw up plans for the selection of highly productive animals;
- acceleration of the timing of the implementation of the genetic potential of animals through increased levels of feeding;
- to predict the productivity of animals by the development of organs and individual muscles, or muscle groups.

2. Place of discipline in the structure of HEC:

The discipline "The main stages of the formation of the animal organism" refers to the variable part of Block 1 of the curriculum "Disciplines (modules)" , "Disciplines of choice."

Table No. 1 shows the previous and subsequent disciplines aimed at the formation of the competencies of the discipline in accordance with the competency matrix of HEC.

Table number 1.

Previous and subsequent disciplines aimed at the formation of competencies

| No. p / p | Code and name of competency | Previous disciplines | Subsequent disciplines (groups of disciplines) |
|------------------------|--|---|--|
| Universal competencies | | | |
| 1 | UC-5. Ability to follow ethical standards in professional activity . | General Microbiology, Virology and Immunology | Epizootology and infectious diseases; Theory and practice of infectious diagnostics; Diagnostics of diseases and therapy of animals; Anatomy and histology of animals; Pathology of animals; Formation of productive qualities of animals in the conditions of |

| | | | |
|--|--|---|--|
| | | | <p>various technologies; Methods of increasing the productive and reproductive qualities of animals; Influence of hygienic factors on productivity and natural resistance of the organism of animals; Pedagogical practice; Research practice</p> |
| General professional competencies | | | |
| 2 | GPC-1. Own the necessary knowledge system in the field corresponding to the direction of training. | <p>General Microbiology, Virology and Immunology; Diagnostics of diseases and therapy of animals; Formation of productive qualities of animals in conditions of various technologies;</p> | <p>Epizootology and infectious diseases; Theory and practice of infectious diagnostics; Anatomy and histology of animals; Pathology of animals; Methods of increasing the productive and reproductive qualities of animals; Influence of hygienic factors on productivity and natural resistance of the animal organism; Pedagogical practice; Research practice; Research</p> |
| 3 | GPC-6. The ability to improve on the basis of traditional morality. | <p>General Microbiology, Virology and Immunology; Diagnostics of diseases and therapy of animals; Formation of productive qualities of animals in</p> | <p>Epizootology and infectious diseases; Theory and practice of infectious diagnostics; Anatomy and histology of animals; Pathology of animals;</p> |

| | | | |
|---------------------------|---|--|---|
| | | conditions of various technologies; | Methods for increasing the productive and reproductive qualities of animals; Influence of hygienic factors on productivity and natural resistance of the animal organism |
| Professional competencies | | | |
| 4 | PC-1. The ability to understand the modern problems of veterinary medicine, livestock and use fundamental ideas in the field of professional activity for the formulation and solution of new problems. | General Microbiology, Virology and Immunology; Diagnostics of diseases and therapy of animals; Formation of productive qualities of animals in conditions of various technologies; | Epizootology and infectious diseases; Theory and practice of infectious diagnostics; Anatomy and histology of animals; Pathology of animals; Methods for increasing the productive and reproductive qualities of animals; Influence of hygienic factors on productivity and natural resistance of the animal organism |

3. Requirements for the results of mastering the discipline:

The process of studying the discipline is aimed at the formation of the following competencies:

UC-5. Ability to follow ethical standards in professional activity.

GPC-1. Own the necessary knowledge system in the field corresponding to the direction of training.

GPC -6. The ability to improve on the basis of traditional morality.

PC-1. The ability to understand the modern problems of veterinary medicine, livestock and use fundamental ideas in the field of professional activity for the formulation and solution of new problems.

As a result of studying the discipline, the student must:

To know :

- How is the process of development and growth of tissues and organs in animals in postnatal ontogenesis;

- factors affecting the development and growth of tissues and organs in animals
- the main directions, problems, theories of the stages of development and growth of animals and methods of morphology;

- the general laws of the postnatal development of industrial animals;

To be able to :

- form and argue for their own position on various problems of animal morphology; use the patterns of animal development to evaluate and analyze the formation of productivity of different animal species;

- to use in cognitive and professional activities basic knowledge in the field of morphological sciences;

- build and implement promising lines of scientific and professional self-development and self-improvement; the ability to critically reflect on available scientific evidence, etc.

- determine the species affiliation of organs by anatomical signs: size, structure, consistency, color.

- conduct a comparative analysis of the observed structural changes, formulate conclusions and justifications for them.

To own :

- specific theoretical knowledge of the discipline.

- modern methods and methods of studying the structural organization of biological objects at all its levels.

3. The volume of discipline and types of educational work

The total complexity of the discipline is 4. credit units. ____

| Type of study | Total hours | Semester | | | |
|---------------------------------------|-------------|----------|---|---|-----|
| | | | | | 4 |
| Classroom activities (total) | 80 | | | | 80 |
| Including: | - | - | - | - | - |
| Lectures | 40 | | | | 40 |
| Practical Activities (PP) | 40 | | | | 40 |
| Workshops (C) | | | | | |
| Laboratory work (LR) | | | | | |
| Independent work (total) | 37 | | | | 37 |
| Formative/Summative Assessment | 27 | | | | 27 |
| Total labor time hour | 144 | | | | 144 |
| Zach . units | 4 | | | | 4 |

5. The content of the discipline

5.1. The content of the sections of the discipline

| No. p / p | The name of the discipline section | Section content (topics) |
|-----------|------------------------------------|--|
| 1. | Introduction | - Goals and objectives of the course. - The concept of development, differentiation and growth of animals. Genetic foundations and some general patterns of ontogenesis |

| | | |
|----|--|---|
| 2. | The process of phylogenesis and ontogenesis of animal development | <ul style="list-style-type: none"> - Methods of studying and accounting for the development, differentiation and growth of farm animals - The frequency of life phenomena. The relationship of the daily and seasonal rhythms of the physiological functions of farm animals with their livelihoods and productivity. The rhythm of animal growth |
| 3. | Intrauterine development of farm animals | <ul style="list-style-type: none"> - Species and breed features of the intrauterine development of mammals. The importance of feeding cows, ewes and sows for intrauterine development of offspring - Neurohumoral relationship between the mother's body and the developing embryo |
| 4. | Postnatal development of farm animals | <ul style="list-style-type: none"> - General patterns of prenatal development of farm animals Genetic patterns of animal development - Biochemical patterns of animal development |
| 5. | The main morphological patterns of animal development | <ul style="list-style-type: none"> - The growth of tissues and muscles in young cattle of different directions of sex productivity at different levels of feeding - The growth of tissues and muscles in young cattle of different directions of sex productivity at different levels of feeding |
| 6. | Some general physiological patterns | <ul style="list-style-type: none"> - The growth of tissues and muscles in young pigs of different directions of productivity, gender at different levels of feeding - The growth of tissues and muscles in birds of different sexes. |
| 7. | Myogenesis The histological structure of muscles in different species of animals | <ul style="list-style-type: none"> - Species features of the histological structure of the muscles of farm animals - Factors affecting the growth rate of muscle fibers |
| 8. | Patterns of age-related biochemical parameters of animal muscles | <ul style="list-style-type: none"> - The use of morpho-chemical indicators of carcasses and muscles to assess product quality |

5.2 Sections of the discipline and types of classes

| No. p / p | Section Name | Lectures | Practical exercises and laboratory work | | | IW | Assessment | Total |
|-----------|---|----------|---|----|---------------|----|------------|-------|
| | | | PP/C | LR | of them in IF | | | |
| 1. | Introduction | 5 | 5 | - | 3 | 4 | 3 | 17 |
| 2. | The process of phylogenesis and ontogenesis of animal development | 5 | 5 | - | 3 | 4 | 3 | 17 |
| 3. | Intrauterine development of farm animals | 5 | 5 | - | 3 | 4 | 3 | 17 |
| 4. | Postnatal development of farm animals | 5 | 5 | - | 3 | 5 | 3 | 18 |

| | | | | | | | | |
|----|--|---|---|---|---|---|---|----|
| 5. | The main morphological patterns of animal development | 5 | 5 | - | 3 | 5 | 3 | 18 |
| 6. | Some general physiological patterns | 5 | 5 | - | 3 | 5 | 4 | 19 |
| 7. | Myogenesis The histological structure of muscles in different species of animals | 5 | 5 | - | 3 | 5 | 4 | 19 |
| 8. | Patterns of age-related biochemical parameters of animal muscles | 5 | 5 | - | 3 | 5 | 4 | 19 |

6. Laboratory workshop

Not provided.

7. Practical classes (seminars)

| No. p / p | Discipline section number | Name of laboratory work | Labor capacity (hour.) |
|-----------|---------------------------|---|------------------------|
| 1. | 1 | Goals and objectives of the study course. | 2 |
| 2. | | The concept of development, differentiation and growth of animals. Genetic foundations and some general patterns of ontogenesis | 3 |
| 3. | 2 | Methods of studying and accounting for the development, differentiation and growth of farm animals | 2 |
| 4. | | The frequency of life phenomena. The relationship of the daily and seasonal rhythms of the physiological functions of farm animals with their livelihoods and productivity. The rhythm of animal growth | 3 |
| 5. | 3 | Species and breed features of the intrauterine development of mammals. The importance of feeding cows, ewes and sows for intrauterine development of offspring | 2 |
| 6. | | Neurohumoral relationship between the mother's body and the developing embryo | 3 |
| 7. | 4 | General patterns of prenatal development of farm animals Genetic patterns of animal development | 2 |
| 8. | | Biochemical patterns of animal development | 3 |
| 9. | 5 | Tissue and muscle growth in young cattle in different directions of sex productivity at different levels of feeding | 2 |
| 10. | | Tissue and muscle growth in young cattle in different directions of sex productivity at different levels of feeding | 3 |
| 11. | 6 | The growth of tissues and muscles in young pigs of different directions of productivity, gender at different levels of feeding | 2 |

| | | | |
|-----|---|--|---|
| 12. | | The growth of tissues and muscles in birds of different sexes. | 3 |
| 13. | 7 | Species features of the histological structure of the muscles of farm animals | 2 |
| 14. | | Factors affecting muscle fiber growth rate | 3 |
| 15. | 8 | The use of morpho-chemical indicators of carcasses and muscles to assess product quality | 5 |

8. Logistics

- Personal Computer.
- Multimedia equipment.

9 . Inform Discount maintenance of discipline

a) Software

- Windows Enterprise
- Microsoft Office .
- Adobe Acrobat .

b) Databases, reference and search engines

1. www.cnshb.ru ,
2. www.elibrary.ru ,
3. www.vet.purdue.edu ,
4. www.allvet.ru ,
5. www.glossary.ru ,
6. <https://www.ncbi.nlm.nih.gov/pubmed>
7. <http://www.uchvuz.ru>
8. <http://www.veterinarka.ru>
9. <https://www.medlit.biz>
10. <http://effect3.ru>
11. <https://cyberleninka.ru/>

10. Educational and methodological support of the discipline:

a) The main literature:

1. Akayevsky A.I. Anatomy of Pets / A.I. Akayevsky, Yu.F. Yudichev, S.B. Seleznev. - M., 2009 .-- 638 p.
2. Nikitchenko V.E., Nikitchenko D.V. Sheep meat productivity (Age-specific morphology). RUDN, 2009 .-- 591 p.
3. Roldugina N.P., Nikitchenko V.E., Yaglov V.V. Workshop on the histology of domestic ones. - M., 2009.

b) Additional literature:

1. Magazines: All about meat, Meat industry, Livestock, Poultry and poultry products. sheep (age-related morphology). Moscow, RUDN, 2009, 591 pp.

2. Svechin K.B. Individual development of farm animals. - Kiev, "Uro-zhay", 1976. - 288 p.
3. Khrustaleva I.V., Mikhailov N.V., Shneiberg Y.I., Slesarenko N.A. and others. Anatomy of domestic animals. –M.: Kolos, 1997. –703 p.


11. Guidelines for students in the development of the discipline (module)

Not provided.

12. Fund of assessment tools for intermediate certification of students in discipline (module)

*Materials for assessing the level of mastering the educational material of the discipline " **The main stages of the formation of the animal organism** " (evaluation materials), including a list of competencies with an indication of the stages of their formation, a description of indicators and criteria for evaluating competencies at various stages of their formation, a description of the assessment scales, standard control tasks or other materials necessary to assess knowledge, skills, skills and (or) experience of activity, characterizing the stages of the formation of competencies in the process of mastering the educational program, methodological materials that determine the procedures for assessing knowledge, skills, skills and (or) experience of activities that characterize the stages of formation competencies are developed in full and are available for students on the discipline page at TUIS RUDN.*

Department Director


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