

Annotation of compulsory educational component

Academic discipline	Biochemistry in animal husbandry
Tutor	Tsekhmistrenko Svitlana Ivanivna Dr of agricultural sciences, professor, Head of the department of chemistry
Courses and semesters, when the discipline is planning to study	2 course, 3, 4 semester
List of competencies and learning-related outcomes that discipline provides	<p>According to the requirements of the educational-professional program "Technology of production and processing of livestock products" applicants must acquire the ability to obtain the following competencies:</p> <p>GC 3 (general competence). Ability to apply knowledge in practical situations.</p> <p>GC 4. Knowledge and understanding of the subject area and understanding of professional activity.</p> <p>GC 5. Ability to adapt and act in a new situation.</p> <p>GC 6. Ability to work in a team and have interpersonal skills.</p> <p>GC 7. Ability to evaluate and ensure the quality of the work performed.</p> <p>GC 8. Efforts to preserve the environment.</p> <p>GC 9. Ability to search, process and analyze information from various sources.</p> <p>GC 10. Ability to apply knowledge of morphology, physiology and biochemistry of various species of animals to implement effective technologies for the production and processing of their products.</p> <p>The result of studying the discipline is the students' acquisition of such knowledge and skills:</p> <ul style="list-style-type: none"> • To know modern methods of physical and chemical analysis. • To calculate and prepare solutions of organic and inorganic compounds of different concentrations. • To take samples of tissues and substrates of the animal body (urine, milk, blood, saliva, scar fluid, gastric juice, liver biopsy) and obtain cells and cell fractions from tissues and organs. • To comply with requirements for environmental protection. To know the rules for the disposal of chemical reagents. • To use precursors that do not harm the environment and do not have a prolonged effect on the body of animals and people. • To master the methodology of conducting experimental research, to get acquainted with the methods of biochemical research and the rules of setting up an experiment. • To carry out biometric processing of the obtained results of biochemical studies. • To learn working on modern equipment and devices used in biochemical laboratories. • To teach students thinking, analyzing and independently working on literary sources from various sections of biochemistry. • To carry out standardized feeding of animals, for this purpose, to know the main components of the animal body: carbohydrates, proteins, lipids, biologically active substances. • To consider the peculiarities of the chemical composition and the main methods of feed analysis. • To analyze the main systems of metabiological transformations of carbohydrates, lipids and proteins to control the quality of animal husbandry products and the physiological state of animal feeding. • To study the peculiarities of the course of biochemical processes in the body of animals under different conditions of keeping.

	<ul style="list-style-type: none"> • To determine indicators characterizing metabolic processes under the influence of various physical and chemical factors. • To know the peculiarities of metabolism and energy in the body of ruminants. • To determine the biochemical indicators of milk. • To determine the biochemical indicators of beef. • To know the peculiarities of metabolism and energy in the body of monogastric animals. • To determine the chemical parameters of meat: moisture, pH, content of proteins, fats, carbohydrates, vitamins, biologically active substances and make conclusions about the quality of pig farming products. • To consider the specificity of metabolism and energy in the bird's body. • To determine the biochemical indicators of poultry eggs and make conclusions about the quality of poultry products. • To master the generally accepted methods for determining the content of various metabolites, enzyme activity and other indicators that characterize the physiological state of animals and ensure compliance with biological safety. • To determine the content of vitamins in feed, biological fluids, vitamin preparations, performance stimulants and calculate their need for the prevention of hypovitaminosis. • To apply international and national standards and practices in professional activities in order to determine the chemical composition of biological fluids and tissues of the animal body. • To know the historical stages of the development of animal biochemistry. • To investigate the role of Ukrainian scientists and their contribution to biochemical science.
Description of the discipline	
Preconditions necessary for the study of discipline	The compulsory educational component "Biochemistry in animal husbandry" is based on the knowledge of such disciplines as "Inorganic chemistry", "Organic chemistry", "Anatomy and morphology of animals", "Animal physiology", "Microbiology" and "Genetics" studied at 1 th course
Maximum number of students who can study simultaneously	55students
Lesson plans	<p>Lectures</p> <ol style="list-style-type: none"> 1. Biochemistry of carbohydrates. 2. Chemistry and metabolism of lipids. 3. Chemistry and metabolism of proteins and nucleic acids. 4. Mineral exchange. Water exchange 5. Vitamins. 6. Enzymes. 7. Hormones. 8. Biological oxidation. Metabolism as a whole. 9. Biochemistry of nervous and muscle tissues. 10. Blood biochemistry. Liver biochemistry 11. Biochemistry of connective tissue. Biochemistry of kidneys and urine. 12. Biochemistry of mammary gland and milk. 13. Biochemistry of meat <p>Practical classes</p> <ol style="list-style-type: none"> 1. Biochemistry of carbohydrates. 2. Chemistry and metabolism of lipids. 3. Chemistry and metabolism of proteins and nucleic acids. 4. Mineral exchange. Water exchange 5. Vitamins. 6. Enzymes. 7. Hormones.

	<ol style="list-style-type: none">8. Biochemistry of muscle and connective tissue.9. Blood biochemistry. Liver biochemistry10. Biochemistry of bone tissue.11. Biochemistry of kidneys and urine.12. Biochemistry of meat13. Biochemistry of milk.
Teaching language	Ukrainian