

Abstract of the optional educational component

Subjects	Microbiology in animal husbandry
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The course and semester in which the study of the discipline is planned	2 course; 4 th semester
Faculties whose students are offered to study the discipline	Biological-technological faculty
List of competencies and relevant ones learning outcomes provided by the discipline	<p>According to the requirements of the educational and professional program "Technology of production and processing of animal husbandry products", applicants must acquire the ability to acquire the following competencies:</p> <p>ZK 3 (general competence). Ability to apply knowledge in practical situations.</p> <p>ZK 4. Knowledge and understanding of the subject area and understanding of professional activity.</p> <p>ZK 7. Ability to evaluate and ensure the quality of performed works.</p> <p>PC 2 (professional competence). The ability to use modern knowledge about the methods of indication and identification of microorganisms for effective professional activity in the field of technology of production and processing of animal husbandry products.</p> <p>The result of studying in the discipline is the acquisition by students of the following knowledge and skills:</p> <ul style="list-style-type: none"> • to ensure compliance with the parameters and control technological processes for the production and processing of animal husbandry products in order to prevent microbial contamination of the obtained products. • to train employees of the enterprise in modern and new components of technological processes for the production and processing of livestock products (to know modern methods of canning and storing feed, raw materials and obtained products in order to prevent their spoilage); • to search, process and generalize information using modern information technologies for the use of global programs aimed at replacing antimicrobial drugs with alternatives (immunomodulators, bacteriophages, antimicrobial peptides, pro-, pre-, synbiotics, plantextracts, feed enzymes); • to apply knowledge of the infectious pathology of farm animals for the effective management of the enterprise's economic activities (to conduct timely immunoprophylaxis of diseases, organize and demand compliance by employees with anti-epizootic measures, plan measures to increase the immunoreactivity of the herd); • to develop and effectively manage the technological processes of livestock production processing (implementation of a system of hazard analysis and critical control points, which creates conditions for the production of safe products at the enterprise by identifying and controlling dangerous microbial factors); • to apply international and national standards and practices in professional activities (to evaluate the obtained products of animal origin according to the existing DSTU and be able to apply them in

	practice; to know the current trends in using the achievements of microbiological science to increase the productivity of farm animals and improving the quality of products in Ukraine and in the world).
Description of the discipline	
Prerequisites necessary for studying the discipline	The optional educational component " Microbiology in animal husbandry " is based on knowledge of such disciplines as "Physiology of farm animals", "Morphology of farm animals", "Biochemistry in animal husbandry", "Genetics with biometrics", "Feeding of farm animals", "Hygiene and welfare of animals", "Technology of reproduction of animals", studied in previous semesters.
Maximum the number of students who can study at the same time	55 students
Subjects of classes	<p style="text-align: center;">Lectures</p> <ol style="list-style-type: none"> 1. Introduction. Morphology of bacteria. 2. Physiology of microorganisms. 3. The role of microorganisms in the transformation of substances in nature. 4. Ecology of microorganisms. 5. Influence of environmental factors on microorganisms. 6. Microflora of milk, fodder and livestock products. 7. Theory of infection and immunity. 8. Infectious disease agents. <p style="text-align: center;">Practical classes</p> <ol style="list-style-type: none"> 1. Bacteriological laboratory: its tasks, work rules, safety techniques and personal prevention. 2. Immersion light microscope system. Bacteriological research technique. Morphology of bacteria 3. Making smears from cultures of microorganisms and the researched material. Preparation of dyes. Simple and complex painting methods. 4. Study of the morphology and systematic of fungi and actinomycetes in cultures and stationary preparations. 5. Preparation of nutrient media for cultivation of microorganism, their sterilization. The technique of sowing from pathological material and transplanting cultures of microorganisms. 6. Methods of isolation of pure cultures of aerobic and anaerobic microorganisms. 7. Study of cultural properties of bacteria, features of their growth on dense and liquid media. 8. Study of biochemical properties of bacteria Study of proteolytic, surolytic, hemolytic, reducing properties. Determination of the type of microorganisms. 9. Bacteriological research of air, water, soil, fodder. Determination of colititer, coliindex of water cterio. 10. Determination of colititer, coliindex of meat and eggs. 11. Study of the antagonistic activity of microorganisms. Probiotics. 12. Determination of the total microbial number of milk. 13. Bacteriological and mycological-toxicological research of fodder. 14. Colibacteriosis, salmonellosis, pasteurellosis. Laboratory studies. Identification of crops. Biological drugs.

	15. Anthrax. Laboratory studies. Identification of crops. Biological drugs. 16. Leptospirosis. Laboratory studies. Identification of crops. Biological drugs.
Language teaching	Ukrainian, English