

## CATALOG OF ELECTIVE DISCIPLINES

**8D09 - Veterinary**

(Code and classification of the field of education)

**8D091 - Veterinary**

(Code and classification of the direction of training)

**0841**

(Code in the International Standard Classification of Education)

**D138 - Veterinary science**

(Code and classification of the educational program group)

**8D09102 - Veterinary sanitation**

(Code and name of the educational program)

**Doctor of philosophy (PhD)**

(Level of preparation)

**set of 2024**

**Developed**

By the Academic Committee of the EP  
Head of AK Yessengulova N.  
Manager of EP Strikova F.

**Reviewed**

at the meeting of the Commission on Academic Quality of the Faculty of Veterinary Medicine and Agricultural Management by protocol No. 3 of January 09, 2024.

at a meeting of the Academic Quality Commission  
Research School of Veterinary Medicine and Agriculture.

Recommended for approval by the University Academic Council  
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**Approved**

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## Food and dietary supplement safety

Discipline cycle	Profiling discipline
Course	1
Credits count	5
Knowledge control form	Examination

### Short description of discipline

*The discipline studies the classification of biological additives by groups. Hazard (risk) factors excess of toxic elements, mycotoxins, pesticides, dosage, mechanical and biological contamination of products. To evaluate laboratory studies of the safety and quality of raw materials and finished products. Methods and results of identification of biologically active additives by codes. Rules and forms of registration of the results of the protocol. Requirements for production, packaging and labeling in accordance with the Law of the Republic of Kazakhstan "On food safety".*

### Purpose of studying of the discipline

*To study organoleptic, physico-chemical, microbiological, technological properties, other quality and safety indicators depending on the type of food ingredients and their purpose.*

### Learning Outcomes

*ON4 Apply methods for assessing the quality and safety of products of animal and vegetable origin.*

*ON6 Apply modern methods for determining the main foreign substances, genetically modified and other contaminants contained in food products.*

*ON7 To control the safety and quality of raw materials, materials and finished products of animal and vegetable origin at the stages of production and storage.*

*ON8 Organize and conduct research on veterinary medicine.*

### Learning outcomes by discipline

*- to evaluate laboratory studies of the safety and quality of raw materials and finished products;*

*- possess methods and results of identification of biologically active additives by codes;*

*- to control the quality of food products containing food additives;*

*- be able to apply theoretical knowledge in practice.*

### Prerequisites

*Masters degree course*

### Postrequisites

*Doctoral student research work, including internship and doctoral dissertation IV Doctoral student research work, including internship and doctoral dissertation III*

## Veterinary and sanitary examination and safety of feed of animal origin

Discipline cycle	Profiling discipline
Course	1
Credits count	5
Knowledge control form	Examination

### Short description of discipline

*When studying the discipline, the modern classification of feed and feed additives is studied. The nutritional value, chemical composition and safety indicators of feed, compound feed and raw materials for their production are being monitored at modern agro-industrial enterprises. Doctoral students acquire the skills to carry out an examination of the quality and safety of feed in accordance with the requirements of international standards and veterinary and sanitary rules in domestic conditions. Production technology, methods and requirements for storage and preparation for feeding.*

### Purpose of studying of the discipline

*Prepare doctoral students in the field of veterinary and sanitary expertise and safety of animal feed, providing them with the necessary knowledge, skills and competencies to conduct high-quality scientific research in this field.*

### Learning Outcomes

*ON4 Apply methods for assessing the quality and safety of products of animal and vegetable origin.*

*ON6 Apply modern methods for determining the main foreign substances, genetically modified and other contaminants contained in food products.*

### Learning outcomes by discipline

*- to master practical skills of quality control and ensuring the safety of animal feed;*

*- development of new methods of research and control of feed quality, including analysis of nutrients and microbiological safety.*

### Prerequisites

*Masters degree course*

### Postrequisites

*Doctoral student research work, including internship and doctoral dissertation IV Doctoral student research work, including internship and doctoral dissertation III*

## Veterinary and sanitary control nitrate plant products

Discipline cycle	Profiling discipline
Course	1
Credits count	5
Knowledge control form	Examination

### Short description of discipline

*The discipline studies the permissible levels of nitrates and nitrites in plant products. The dangers of exceeding the norms of nitrates and nitrites in plant products for humans, in feed – for cattle, cattle, poultry. Methods and equipment for determining the content of nitrates and nitrites in plant products. The reasons for the excess of nitrate and nitrite content in plant products, measures to prevent and reduce indicators.*

## **Purpose of studying of the discipline**

To study methods of veterinary and sanitary control of plant products for the presence of nitrates, nitrites and nitros compounds.

## **Learning Outcomes**

ON4 Apply methods for assessing the quality and safety of products of animal and vegetable origin.

ON7 To control the safety and quality of raw materials, materials and finished products of animal and vegetable origin at the stages of production and storage.

## **Learning outcomes by discipline**

- be able to monitor the content of nitrates and nitrites, nitros compounds in food raw materials and food products;
- to know the main sources of nitrates and nitrites in raw materials and food products; the reasons for their increased content in vegetables; the mechanism of toxic effect on the body; clinical manifestation of intoxication; rationing of nitrates, nitrites as food additives;
- permissible levels of nitrates, nitrites, nitroso compounds in food products;

## **Prerequisites**

Masters degree course

## **Postrequisites**

Doctoral student research work, including internship and doctoral dissertation IV Doctoral student research work, including internship and doctoral dissertation III

## **Veterinary and environmental safety assessment of livestock production**

Discipline cycle	Profiling discipline
Course	1
Credits count	5
Knowledge control form	Examination

## **Short description of discipline**

The discipline studies the goals and principles of veterinary and environmental assessment of the safety of livestock production. Norms of pollutants in feed, the environment (soil, water, air), and animal products. Legislative and regulatory acts in the field of ecology and veterinary medicine for the production of livestock products. Methods for assessing, predicting and preventing the impact of environmental hazards on livestock products, including measuring the impact on the safety of livestock products.

## **Purpose of studying of the discipline**

Training of doctors capable of assessing the safety of livestock production. To master the methods, organization and conduct of sanitary and environmental monitoring of livestock facilities.

## **Learning Outcomes**

ON3 Conduct sanitary and environmental monitoring of livestock and poultry.

ON6 Apply modern methods for determining the main foreign substances, genetically modified and other contaminants contained in food products.

ON7 To control the safety and quality of raw materials, materials and finished products of animal and vegetable origin at the stages of production and storage.

## **Learning outcomes by discipline**

- know the pollutants of raw materials and food products, toxic elements; pathogenic agents in raw materials and products, toxic infections; issues of state veterinary control over product safety;
- be able to conduct veterinary and sanitary examination strictly in accordance with current legislation or scientifically recognized international methods of processing and hygienic standards;
- to carry out a sanitary and environmental assessment of the safety of livestock production;
- implement the state policy in the field of food safety, subject to sanitary and epidemiological control.

## **Prerequisites**

Masters degree course

## **Postrequisites**

Doctoral student research work, including internship and doctoral dissertation VI

## **Veterinary and sanitary control nitrate plant products**

Discipline cycle	Profiling discipline
Course	1
Credits count	5
Knowledge control form	Examination

## **Short description of discipline**

The discipline studies environmental and sanitary problems in animal husbandry and poultry farming. Ecological passport of the livestock complex. Conducting systematic monitoring of compliance with environmental safety on the territory of farms and complexes. The impact of environmental pollution by wastewater and waste disposal methods Monitoring of the environmental situation. Analyzes information materials on the concentration of pollutants and develops measures to eliminate violations of environmental legislation.

## **Purpose of studying of the discipline**

- Preparation of PhD students capable of formulating and solving modern scientific and practical problems in science and production;
- able to professionally solve issues of state veterinary control over the safety of products and possess information on the state of veterinary medicine in Kazakhstan and abroad;
  - successfully carry out research and management activities in various structures of veterinary medicine.

## **Learning Outcomes**

ON3 Conduct sanitary and environmental monitoring of livestock and poultry.

ON7 To control the safety and quality of raw materials, materials and finished products of animal and vegetable origin at the stages of production and storage.

## **Learning outcomes by discipline**

- know the main ways of contamination of food and food raw materials;
- methodology for determining the content of toxic elements, pathogenic agents, GMO content in raw materials and products;
- process the results obtained, analyze and comprehend them taking into account the available literature data;

#### **Prerequisites**

Masters degree course

#### **Postrequisites**

Doctoral student research work, including internship and doctoral dissertation IV Doctoral student research work, including internship and doctoral dissertation III

### **Modern problems of food safety**

Discipline cycle	Profiling discipline
Course	1
Credits count	5
Knowledge control form	Examination

#### **Short description of discipline**

When mastering the discipline, the issues of food quality and safety are considered. They study the most common contaminants and types of falsification both in the Republic of Kazakhstan and abroad. They master modern research methods and means of identification, examination, evaluation of the quality and safety of raw materials. The doctoral student should be guided by the basic laws of the Customs Union, the EAEU, the WTO, ISO standards regulating the production of quality products. Monitor the quality and safety of food.

#### **Purpose of studying of the discipline**

The purpose of studying the discipline is to form the necessary theoretical knowledge and practical skills in the field of food quality and safety management on the basis of systematic identification, assessment and management of hazardous factors affecting product safety.

#### **Learning Outcomes**

ON4 Apply methods for assessing the quality and safety of products of animal and vegetable origin.

ON6 Apply modern methods for determining the main foreign substances, genetically modified and other contaminants contained in food products.

ON7 To control the safety and quality of raw materials, materials and finished products of animal and vegetable origin at the stages of production and storage.

ON8 Organize and conduct research on veterinary medicine.

#### **Learning outcomes by discipline**

-to master modern research methods and means of identification, examination, evaluation of the quality and safety of raw materials;

- to monitor the quality and safety of food.

#### **Prerequisites**

Masters degree course

#### **Postrequisites**

Doctoral student research work, including internship and doctoral dissertation IV Doctoral student research work, including internship and doctoral dissertation III