

**National University of Life and Environmental Sciences of Ukraine**

Department of Parasitology and Tropical Veterinary Medicine

“APPROVED”

Dean of the Veterinary Medicine Faculty

Doctor of Biological Sciences,  
Academician\_\_\_\_\_Tsvilikhovsyy M.I.

“\_\_\_\_” June 2020

## **WORKING PROGRAM OF THE DISCIPLINE**

**«Veterinary-sanitary examination with the basics of technology and  
standardization of products of animal origin»**

EL «Master»

For training specialists of the direction

**212 «Veterinary Medicine»**

Veterinary Medicine Faculty

Kyiv – 2020

Working program of the discipline «**Food Hygiene**» for students by the direction - 212 - «Veterinary Medicine».

„\_\_\_\_” \_\_\_\_\_, 2020 – \_\_\_\_\_ p.

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Working program approved at a meeting of the **Department of Veterinary Hygiene named after Prof.A.K.Skorohodko**

Protocol 3 from “16” June 2020 № \_\_\_\_\_

Acting Head of the Department of Veterinary Hygiene named after Prof.A.K.Skorohodko

\_\_\_\_\_ ( Kucheruk M.)

“16” June 2020

Approved educational and methodological Academic Council of the Faculty of Veterinary Medicine

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“\_\_\_\_\_” June 2020 \_\_\_\_\_M.I. Tsvilikhovsyy

### 1. Description of discipline «Food Hygiene»

<b>Discipline, field of studying, specialty, education and qualification level</b>	
Field of knowledge	21 Veterinary
Training direction	212 – «Veterinary Medicine»
Speciality	
Educational and qualification level	Master
<b>Characteristics of discipline</b>	
Specie	Normative
General quantity of hours	120
Quantity of credits ECTS	4
Quantity of modules	4
Course work	+
Form of control	Semester test, exam
<b>Indicators of discipline for full-time and correspondence forms of training</b>	
	full-time form
Year of training	4
Semester	8, 9
Lectures	60 hours
Practical lessons	75 hours
Laboratory lessons	-
Independent work	45 hours
Individual tasks	-
The number of weekly hours for full-time studying student: auditorium independent work of the student	6 hours

## **2. The aims and objectives of the discipline**

The course "Food Hygiene" is a special cycle discipline in veterinary professionals training. According to the Law of Ukraine "On Veterinary Medicine" primary purpose of teaching is to form in veterinarians knowledge of sanitary measures and clear issues of hygiene testings and safety of food and raw materials of animal origin during their production (private sector, collective farms, etc.), at all stages of processing (meat, dairy, poultry, and fish plants) and during transport, storage and sale, following the implementation of existing veterinary and sanitary measures.

Course content will provide the veterinary students with a general understanding of the basic principles of food safety, to include development and enforcement of laws and regulations impacting food animal processing industries and food consumers (e.g., traceability and ante- and post-mortem inspection and certification requirements); approaches to microbiological and physical foodborne hazard identification, testing and sampling; and foodborne hazard prevention and control.

**The purpose** of the program is the acquisition of theoretical and practical knowledge on the food safety quality and safety, practical skills in conducting testings of the products and to prepare students for independent practical work.

### **2.1 Objectives of study discipline**

Based on the job description of a veterinarian every student should have the following basic knowledge:

- ensure production of safe products only benign for the population and raw materials for industry;
- ruled out poisoning people diseases common to humans and animals (antropozoonozamy), through food and industrial raw materials of animal origin;
- prevent the spread of bacterial, viral, helmintozyh diseases of farm animals through meat, meat products and waste products of slaughter;
- assist in the improvement of livestock by detecting diseases in animals are slaughtered in slaughterhouses and meat processing enterprises of all forms of ownership.

### **2.2. The requirements for knowledge and skills acquired as a result of the study**

After the discipline the student **should**:

- understand the techniques required to ensure safe and wholesome food of animal origin;
- be knowledgeable with the concepts and practices associated with good sanitary practices and reducing the risk of secondary contamination

- Veterinary preparations basics of livestock and poultry for slaughter and recycling technologies;
- Meat and other products of slaughter, milk, fish, eggs, bee products - their chemical composition, biological value and commodity evaluation;
- Veterinary judgement of animal products for infectious, parasitic, non-communicable diseases, poisoning, radioactive substances lesions;
- Food poisoning and toxicosis microbial origin and their prevention through the veterinary medicine;
- Requirements of state standards and other regulations concerning the quality and safety of animal products;
- Fundamentals of standardization, certification and quality management.

**b) be able to:**

- recognize safe preharvest management practices in animals to reduce the risk of zoonotic food borne pathogens;
- complete an ante mortem and post mortem examination without extensive support and are familiar with humane slaughter procedures;
- carry post mortem veterinary and sanitary examination of carcasses and organs of slaughtered animals, poultry, game at industrial enterprises, veterinary labs at food markets, supermarkets, food industrial refrigerators;
- possess modern methods of veterinary research;
- carry science based health assessment of raw materials and products of animal origin.

**2.3. The list of subjects indicating sections of assimilation which is necessary to study the subject**

clinical diagnosis (research methods), domestic non-contagious disease, pathologic physiology and immunology, pathological anatomy, biochemistry, parasitology.

**2.4. The list of subjects indicating**

pat. anatomy (pathologic changes for invasive disease).

**3. STUDY RESULTS - COMPETENCIES**

Mid (Early) - understand the impact and consequences of common zoonoses and know where to find relevant information;

Mid (Early) - to understand the impact and consequences of diseases of food origin on human health and to know where to find relevant information;

Mid (Early) - understand the regulatory procedures for common zoonoses;

Mid (Early) - understand the regulatory procedures for foodborne illness;

Mid - Understand and explain food safety practices as implemented on the farm.

Mid Late - to understand mechanisms of development of antibiotic resistance to known pathogens;

Mid Late - to know where to find and how to interpret relevant and reliable information on the relationship between the use of antimicrobials for the treatment

of animals that are then consumed, and the development of antibiotic resistance in humans;

Late - be able to use appropriate drugs and biological agents to ensure the safety of the food chain and the environment.

Late - understand and explain the relationship between animal health control and veterinary health; the role of the veterinarian in cooperation with humane doctors, health professionals, risk analysis, for food safety.

## STRUCTURE OF DISCIPLINE

### «Food Hygiene»

Name of subject	Number of hours						
	тижні	усього	у тому числі				
			Lect	Pract	Lab	Ind	S/w
1	2	3	4	5	6	7	8
<b><i>Module 1. Introduction. The basic technology, hygiene and veterinary and sanitary examination of milk and dairy products</i></b>							
Introduction. General information about “Veterinary hygiene with the basics of technology and standardization of products of animal origin”			2				
The main provisions of the laws of Ukraine "On Veterinary Medicine" and "On safety and quality of food"							2
Organoleptic and laboratory methods for determining the quality of milk.					4		
The chemical composition and technological properties of milk.			4				
Laboratory tests of milk quality parameters.					2		
Requirements for milk according to National Standard ДСТУ 3662-15					2		
Veterinary and sanitary examination and health assessment of milk in case of deasises and poisoning animals.			4				
Methods of milk fat content determination.					2		
Veterinary requirements for import to Ukraine of milk and dairy products.							2
Sanitary conditions for obtaining high-quality milk at farms.			2				
Determination of acidity and dry matter in milk.					2		
The impact of inhibitors on the quality of milk.							1
Veterinary control of milk quality and dairy products in food markets.			2				
Determination of milk proteins and ketones. Milk temperature treatment determination					2		
EU requirements for milk and dairy products.					1		1
Methods of microbiological investigation of milk.					2		
The main sources of microbial contamination of milk.							2

Determining the total bacterial count in cup.							1
Methods of determining the quality of dairy products and cheeses.					2		
Fundamentals of standardization, quality management and certification.			2				
Methods of butter testing.					2		
Colloquium					2		
Total			16		23		8
Module 2. Veterinary-sanitary examination of products of animal and vegetable origin							
Veterinary and sanitary examination of honey and other bee products..			4				
Laboratory methods for determining the quality of honey.					4		
Additional methods for determining quality and safety of honey.							1
Veterinary and sanitary examination of fish and other aquatic organisms.			4				
Methods for determining the freshness of the fish.					4		
Veterinary requirements for import to Ukraine of food fish and other seafood.							2
Veterinary and sanitary examination of poultry eggs.			2		2		
Veterinary and sanitary examination of some egg products.							1
Veterinary and sanitary examination of plant food					4		
Determination of nitrates in foods of plant origin					2		1
Colloquium					2		
Total			10		18		4
Module 3. Animal slaughter, transportation, technology slaughtering and primary processing. Hygiene and control of slaughter products							
Slaughter animals, transportation and identification of fatness categories			4				
Requirements for the transport of slaughter animals and supporting documents					2		
Veterinary requirements for import of slaughtered animals to Ukraine							1
Premices for processing of slaughtered animals and veterinary and sanitary demands. Acceptance of slaughtered animals.			4				
Research lymph nodes and carcasses of slaughtered animals					4		
Liaison requirements							1
The basic technology and hygiene of slaughtered animals and poultry processing			2				
Veterinary-sanitary examination of animal fats					4		

Study regulations on the organization of Veterinary food control							2
Organization and Methods veterinary expertize after slaughter and carcasses of slaughtered animals			2				
Methods and techniques of research animal carcasses after slaughter.					2		
Veterinary-sanitary examination of offal							2
Colloquium					2		
Total			12		12		6
Module 4. MEAT COMPOSITION AND CHARACTERISTICS							
The morphology, chemical composition and characteristics of meat of different animal species			2				
Determining the species origin of meat					4		
Changes in the meat after slaughter			2				
Definition of meat freshness					2		
Definition of rabbits and poultry meat freshness							2
The basic technology of hygiene and preserving of meat and meat products			4				
Veterinary-sanitary examination of sausages and canned meat					2		
Technology of making sausages, meat, canned products							2
Colloquium					2		
Total			8		8		4
Module 5. Veterinary control of slaughter products in cases of poisoning, toxicosis are intoxication							
Meat post mortem examination of in cases of infectious diseases			6				
Methods for determining the meat from diseased and dead animals					4		
Regulations on organization veterinary control							2
Veterinary-sanitary examination of products of slaughter animals with invasive disease			2				
Veterinary and sanitary exam of animals slaughter products for trichinosis					4		
Veterinary-sanitary examination of rabbits and poultry meat at invasion							1
Veterinary-sanitary examination of products of slaughter animals with non-communicable diseases or poisonings			2				
Veterinary and sanitary exam of animals slaughter products for cysticercosis					2		
The method of meat and meat products decontamination							3

Food borne diseases and its prevention			2				
Methods for determination of toxic substances in meat					2		
Veterinary and sanitary exam of game			2				2
Colloquium					2		
Total			14		14		8
Course work	137						
<b>Totally hours</b>	300		60		75		30

### Tests example for control

Question № 1 Depending on age and sex of cattle in the second group are
Bulls (hogs)
Oxes and cows
Heifers and hogs
14 day-old to 3 month-old calves

Question № 2. Psychrophiles can grow at
–20 to +10°C
–10 to +30°C
0 to +50°C
+30 to +80°C

Question № 3. The number of lymph nodes in cattle is
600
200
300
500

Question № 4. Water holding (binding) capacity of meat can be determined:
by applying to a surface of meat a filter paper for 2-3 minutes
by palpation
by scab forming
by applying to a fresh cut of meat a filter paper for 2-3 minutes

Question № 5. What is the order of processing technology of bowels?
Fat removing, cleaning from contents, tailing, sorting out;
Sorting out, cleaning from contents, fat removing, tailing;
Tailing, fat removing, cleaning from contents, sorting out;
cleaning from contents, fat removing, sorting out, tailing.

### Methods of education

Forms and teaching methods - lectures, classes laboratornii by the course.

## Forms of Control

Forms of knowledge control, evaluation system - control of knowledge is made by fulfillment of the laboratory work by the students, presenting of reports, having module tests according to the module- rating system.

Current control of students' knowledge is made on laboratory classes where preliminary control of students' knowledge and skills is conducting. The teacher sets the general problem and discusses it with students, they are solving problems in their discussion. Students are solving control tasks, and the teacher makes verification, evaluation.

Final assessment is conducted to assess learning outcomes at some education (qualification) level or some of its completed stage.

Final control module includes a final evaluation form at the end of logically completed part of lectures and practical exercises and the results counted off for final evaluation.

Semester control is conducted in the form of a semester test (in the 3rd semester) or exam (4th semester) in the amount of educational material and within the deadline set by the curriculum.

1. According to the "Regulations on credit-modular system of training in National university of life and environmental sciences of Ukraine", approved by the university rector on 03.04.2009, ranking students for Academic  $R_{HP}$  study concerning certain discipline is given by formula:

$$R_{HP} = \frac{0,7 \cdot (R_{3M}^{(1)} \cdot K_{3M}^{(1)} + R_{3M}^{(2)} \cdot K_{3M}^{(2)})}{K_{DHC}} + R_{DP} - R_{ШТР},$$

Where  $R_{3M}^{(1)}, \dots, R_{3M}^{(n)}$  - ratings of modules on a 100-point scale;

$n$  – number of modules;

$K_{3M}^{(1)}, \dots, K_{3M}^{(n)}$  – number of ECTS credits, work curriculum provided for the corresponding module;

$K_{DHC} = K_{3M}^{(1)} + \dots + K_{3M}^{(n)}$  – number of ECTS credits, provided by a working curriculum for courses in the current semester;

$R_{DP}$  – rating of additional work;

$R_{ШТР}$  – penalty rating.

The formula can be simplified if we take  $K_{3M}^{(1)} = \dots = K_{3M}^{(n)}$ . Then it will look like:

$$R_{HP} = \frac{0,7 \cdot (R_{3M}^{(1)} + R_{3M}^{(2)})}{2} + R_{DP} - R_{ШТР}.$$

**The rating of the additional work**  $R_{DP}$  added to the  $R_{HP}$  and can not exceed 20 points. It is determined by the lecturer and the students are given the decision of the Department for the execution of work not provided for by the curriculum, but enhance students' knowledge in the discipline.

**Penalty rating**  $R_{ШТР}$  does not exceed 5 points deducted from  $R_{HP}$ . It is determined by the lecturer and the decision of the Department administered to students who have learned the material of module on time, do not comply with work schedules, missed classes and more.

2. Pursuant to the above provisions, the preparation and defense of a courseproject (work) measuredat 100 pointscale and thentranslatedinto a scorefor the nationalscale and scale ECTS.

### **3. Evaluation rates ECTS**

Totalpointsfor all kinds of learningactivities	Evaluation on the national scale	
	For examination, courseproject (work) practices	For credit (test)
90 – 100	perfectly	Accepted
74-89	good	
60-73	satisfactorily	
35-59	Unsatisfactory with the possibility of re-assembly	notacceptedwith the possibility of re-assembly
0-34	Unsatisfactory with the obligatoryre-studyingthe course	notacceptedwith the obligatoryre-studyingthe course

### **Literature**

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