# NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES OF UKRAINE Department of Veterinary Epidemiology and Animal Health Protection

"APPROVED"
Faculty of Veterinary Medicine
"04" June 2025

#### WORK PROGRAMME OF THE DISCIPLINE "Global parasitology"

(full term of study)

Field of knowledge 21 "Veterinary medicine" Speciality 211 "Veterinary medicine"

Educational programme <u>"Veterinary Medicine"</u>

Faculty (Institute) of <u>Veterinary Medicine</u>

Developers:, Doctor of Sciences (Veterinary Medicine), Professor, Professor of the Department of Veterinary Epidemiology and Animal Health Protection Maryna Galat

### **Description of the subject**"Global parasitology" (full-time)

Global Parasitology provides students with a holistic understanding of animal parasitic diseases in a global context. The course covers the morphology, biology, epidemiology, diagnosis, treatment and prevention of parasitoses, with an emphasis on vector-borne infections, zoonoses and economically important diseases. The course includes lectures, practical classes, laboratory tests and analysis of epizootic situations. The aim is to train specialists for the comprehensive diagnosis and control of parasitic diseases at various levels.

Field of knowledge, speciality, educational programme, educational degree				
Educational degree	master's degree			
Speciality	211 "Veterinary medicine	,"		
Educational programme	"Veterinary medicine"			
Cl	naracteristics of the discipl	ine		
Type		compulsory		
Total number of hours		120		
Number of ECTS credits		4		
Number of content modules		2		
Course project (work) (if any)				
Form of control		credit		
	licators of academic discip			
for full-time	and part-time forms of hig			
		f higher education		
	full-time	part-time		
Course (year of study)	6			
Semester	11			
Lecture classes	15 hrs.	hrs.		
Practical, seminar classes	hours	hours		
Laboratory classes	30 hours	hours.		
Independent work	75 hours.	hours.		
Number of weekly classroom	3 hours.			
hours for full-time higher				
education				

#### 1. Purpose, competences and programmatic outcomes of the discipline

The purpose of the discipline "Global Parasitology" is to deepen the theoretical knowledge of the master's degree in the diagnosis, treatment and prevention of global invasive animal diseases, to acquire practical skills in laboratory work, as well as to make a diagnosis and prepare him for independent scientific and practical work. The logic and structure of the course "Global Parasitology" will allow masters to master the necessary amount of knowledge, which will enable them to achieve a high level of professional competence in the future. The main role of the discipline is to master the methods of diagnosis, treatment and prevention of invasive animal diseases. The main focus is on zoonoses - diseases common to humans and animals.

#### Acquisition of competences:

<u>Integrative competence (IC)</u>: the ability to solve complex problems and issues in the field of veterinary medicine, which involves research and/or innovation and is characterised by uncertainty of conditions and requirements.

#### General competences (GC):

- GC 2. Ability to apply knowledge in practical situations.
- GC 7. Ability to conduct research at the appropriate level.
- GC 11. Ability to evaluate and ensure the quality of work performed.

#### special (professional) competences (SC):

- SC 1. Ability to establish the features of the structure and functioning of cells, tissues, organs, their systems and apparatus of the body of animals of different classes and species mammals, birds, insects (bees), fish and other vertebrates.
- SC 2. Ability to use tools, special devices, instruments, laboratory equipment and other technical means to carry out the necessary manipulations during professional activities
- SC 4. Ability to conduct clinical research to formulate conclusions about the condition of animals or to establish a diagnosis.
- SC 5. Ability to apply methods and techniques of pathological and anatomical diagnosis of animal diseases to establish a final diagnosis and causes of death.
  - SC 6. Ability to select, pack, fix and send samples of biological material for laboratory research.
- SC 7. Ability to organise and conduct laboratory and special diagnostic tests and analyse their results.
- SC 8. Ability to plan, organise and implement measures for the treatment of animals of different classes and species suffering from non-contagious, infectious and invasive diseases.
  - SC 19. Ability to carry out educational activities among industry workers and the public.

#### First day competences (DLC):

- KD 1. Demonstrate an understanding of the ethical and legal framework within which the veterinarian must work, including professional aspects, aspects related to animal welfare, animal owners, public health, social and environmental aspects related to professional activities.
- PLO 2.Understand the methods of scientific research, the contribution of basic and applied research to science and the implementation of the 3Rs principle (Replacement, Reduction, Refinement).
- KPI 4.Promote and monitor the health and safety of themselves, patients, animal owners, colleagues and the environment during professional activities; demonstrate knowledge of the principles of quality assurance; apply the principles of risk management in practice.
  - PLO 9. To be able to think critically, review and evaluate literature and presentations.
- PLO 10. Understand and apply the principles of the One Health concept to ensure good clinical practice in veterinary medicine, as well as evidence-based and evidence-based veterinary medicine
- KPI 12. To use professional abilities to contribute to the development of veterinary knowledge and the implementation of the One Health concept in order to promote the health, safety and welfare of animals, humans and the environment, as well as to achieve the UN Sustainable Development Goals.
- KPI 19. To develop appropriate patient treatment plans and provide treatment in the best interests of each animal in care, using available resources, and to provide relevant own considerations for the protection of animal and human health and the environment.
- KPI 20. Provide emergency and first aid to animals of common species. Prioritise and allocate resources according to each specific situation.
- KPI 22. Collect, store and transport specimens, select appropriate diagnostic tests, perform interpretations and understand the limitations of test results.
- KPI 25. Recognise signs of possible reportable animal diseases, zoonoses and animal cruelty and take appropriate action, including reporting to the relevant authorities.
- KPI 27: Prescribe and dispense medicines to patients correctly and responsibly in accordance with the Law and the latest guidelines.
- KPI 35. Conduct pre-slaughter inspection of animals used for food purposes, paying attention to welfare aspects, record observations, take tissue samples after slaughter, store and transport them for research.
- KPI 36. Conduct food and feed inspections to correctly identify conditions affecting the quality and safety of products of animal origin, including associated food processing.
- KPI 38. To advise the public and implement disease prevention and eradication programmes in accordance with the disease and animal species, accepted standards of animal health, welfare, public health and environmental protection

#### Programme learning outcomes (PLOs):

PLO 1. To know and correctly use the terminology of veterinary medicine.

- PLO 3. To determine the essence of physicochemical and biological processes that occur in the body of animals in normal and pathological conditions.
- PLO 5. To establish the relationship between clinical manifestations of the disease and the results of laboratory tests.
  - PLO 18. To carry out accounting reporting in the course of professional activity.

#### 2. **Programme and structure of the discipline**

- of the full-time full-time study

№	Title of the topic		Number of hours			
n/a		weeks	Total hours	Lectur e.	Lab.	Self- study
	Content module 1. Biological features of the pa	 arasite-ho	 st system ir	   ruminan	ts and p	igs
1.	Topic 1: Relationships of animals and the place of parasites in the animal world	1-2	16	2	4	10
2.	Topic 2. Physiology and immunological factors in the parasite-host system	3-4	15	1	4	10
3.	Topic 3. Biological features of the parasite-host system in trematodes	5-6	16	2	4	10
4.	Topic 4. Biological features of the parasite-host system in cestodes	7	12	2	2	8
Content module 2. Biological features of the parasi		te-host sy	stem in hor	ses, birds	and car	nivores
5	Topic 5. Biological features of the parasite-host system in nematodes	8-9	16	2	4	10
6.	Topic 6. Biological features of the parasite-host system in acanthocephalus	10-11	16	2	4	10
7.	Topic 7. Biological features of the parasite-host system in insects and ticks	12-13	16	2	4	10
8.	Topic 8: Biological features of the parasite-host system in protozoa	14-15	13	2	4	7
Course project (work) on (if available in the working curriculum)				-		
Tota	l hours		120	15	30	75

3. Topics of lectures (full term of study)

№ n/a	Name of the topic	Number of hours
1	Topic 1: Relationships of animals and the place of parasites in the animal	2
	kingdom	
2	Topic 2. Physiology and immunological factors in the parasite-host system	1
3	Topic 3. Biological features of the parasite-host system in trematodes	2
4	Topic 4. Biological features of the parasite-host system in cestodes	2
5	Topic 5. Biological features of the parasite-host system in nematodes	2
6	Topic 6. Biological features of the parasite-host system in acanthocephalans	2
7	Topic 7. Biological features of the parasite-host system in insects and ticks	2

8	Topic 8. Biological features of the parasite-host system in protozoa	2
	Total	15

4. Topics of laboratory classes (full term of study)

No	Name of the topic	Number of
n/a	· · · · · · · · · · · · · · · · · · ·	hours
1	Study of modern methods of diagnosis and treatment of trematodoses, cestodoses, nematodoses of ruminants	4
2	Study of methods of diagnosis, treatment and prevention of entomoses and acaroses of ruminants	4
3	Study of methods for diagnosing protozoa of ruminants	4
4	Study of the peculiarities of the spread, diagnosis, treatment and prevention of helminthiasis in pigs	4
5	Improvement of modern methods of diagnostics, treatment and prevention of entomoses, acaroses and protozooses of pigs	4
6	Study of the peculiarities of the spread, diagnosis, treatment and prevention of helminthiasis, entomoses, acaroses and protozoa in horses	4
7	Study of methods for the diagnosis of poultry helminth diseases. Improvement of methods for diagnosis, treatment and prevention of entomoses, acaroses and protozoa in poultry	4
8	Study of the peculiarities of the spread, diagnosis, treatment and prevention of helminthic diseases of carnivores. Improvement of modern methods of diagnostics, treatment and prevention of entomoses, acaroses and protozooses of carnivores	2
Total		30

#### 5. Topics of independent work (full term of study)

$N_{\underline{0}}$	Name of the topic	Number of
n/a		hours
1	Treatment and preventive measures for trematodoses, cestodoses, nematodoses of ruminants. Modern veterinary drugs.	10
2	Treatment and preventive measures for entomoses and acaroses of ruminants. Modern veterinary drugs.	10
3	Treatment and preventive measures for protozoa of ruminants. Modern veterinary drugs.	10
4	Therapeutic and preventive measures for helminthiasis of pigs. Modern veterinary drugs.	8
5	Treatment and preventive measures for entomoses, acaroses and protozooses of pigs. Modern veterinary drugs.	10
6	Therapeutic and preventive measures for helminthiasis, entomosis, acarosis and protozoa of horses. Modern veterinary drugs.	10
7	Treatment and preventive measures for helminthic, entomological, acarotic and protozoal diseases of poultry. Modern veterinary drugs.	10
8	Therapeutic and preventive measures for entomoses, acaroses and protozooses of carnivores. Modern veterinary drugs.	7
Total		75

## 6. Methods and means of diagnosing learning outcomes: (select the required or add)

oral or written questioning;

- module tests;
- credit.

#### 7. Teaching methods (select all that apply or add):

- verbal (lecture, explanation, discussion, instruction, conversation);
- visual (illustration, demonstration, independent observation);
- practical (case study, laboratory work);
- visual method (method of illustrations, method of demonstrations);
- work with educational and methodological literature (note-taking, thesis, annotation, reviewing, writing an abstract);
  - video method (remote, multimedia, web-based, etc.);
  - independent work (completion of tasks).

#### 8. Assessment of learning outcomes.

The assessment of the knowledge of the higher education applicant is based on a 100-point scale and is converted into a national grade in accordance with the current "Regulations on Exams and Tests in NULES of Ukraine"

8.1. Distribution of points by type of learning activity

6.1. Distribution of points by type of learning activity				
Type of learning activity	Learning outcomes	Assessment		
Module 1: Biological feature	s of the parasite-host system in ruminants and	l pigs		
Topic 1. Biological features	of the parasite-host system in ruminants and $% \left( \mathbf{r}\right) =\mathbf{r}^{\prime }$	pigs		
Lecture 1: Animal relationships and the place of parasites in the animal kingdom	The student should be able to determine the place of parasites in the animal kingdom, explain the main types of relationships between living organisms, distinguish between symbiosis, parasitism, mutualism and commensalism, and justify the evolutionary advantages of parasitism as a form of existence.	•		
Laboratory work 1: Study of modern methods of diagnosis and treatment of trematodes, cestodes, nematodes of ruminants	To be able to take samples of biological material for the diagnosis of helminthic diseases of ruminants, to apply modern methods of detection of trematodes, cestodes and nematodes, to interpret the results of laboratory tests, to determine the species of pathogens by morphological characteristics, and to justify the choice of effective anthelmintic drugs, taking into account the type of parasite, stage of infection and characteristics of the animal.	8		
Lecture 2. Physiology and immunological factors in the parasite-host system	Understand the physiological features of parasite-host interaction, explain the mechanisms of parasite adaptation to life in the animal body, characterise the host immune response to different groups of parasites, distinguish between specific and non-specific defence responses, and analyse parasite strategies to avoid or suppress the immune response.	-		
Independent work. Treatment and preventive measures for trematodes, cestodes, nematodes of ruminants.	To know the principles of treatment and prevention of trematodoses, cestodoses and nematodoses in ruminants, to analyse the	8		

Madamasaasi 1		
Modern veterinary drugs.	mechanisms of action of modern anthelmintic drugs, to compare their effectiveness depending on the type of pathogen, phase of infection and species of animal, to develop schemes of treatment and prevention measures taking into account the epizootic situation, as well as to assess the risks of resistance development and safety of drug use.	
Lecture 3: Biological features of the parasite-host system in trematodes	To understand the biological features of the life cycle of trematodes, to explain the relationship between the parasite and the intermediate and final host, to analyse the ways of trematode penetration into the animal body, to assess the effect of the	-
	parasite on the physiological functions of the host, and to characterise the adaptive mechanisms that ensure the survival of trematodes in different phases of development.	
Laboratory work 2. Study of methods of diagnosis, treatment and prevention of entomoses and acaroses of ruminants	To be able to select material for the diagnosis of entomoses and acaroses, identify pathogens by morphological features under a microscope, apply practical methods of diagnosing skin and coat lesions, select insecticidal drugs according to the type of parasite and clinical form of the lesion, justify treatment regimens taking into account the toxicity of drugs, and develop preventive measures taking into account the season, conditions of detention and sources of infection.	8
Independent work. Treatment and preventive measures for entomoses and acaroses of ruminants. Modern veterinary drugs	To know the basic principles of treatment of entomoses and acaroses in ruminants, to analyse the properties of modern insecticidal and acaricidal drugs, to compare their efficacy, toxicity and spectrum of action, to justify the choice of drug depending on the type of pathogen, degree of damage and animal husbandry technology, and to develop prevention schemes taking into account the seasonal activity of parasites, pathogen biology and epizootic situation in the farm.	8
Lecture 4. Biological features of the parasite-host system in cestodes	To understand the life cycle of cestodes, to describe the interaction between the parasite and the intermediate and final host, to analyse the ways of invasion and mechanisms of adaptation of cestodes to different environmental conditions, to assess the impact of parasites on the physiological state of the host, as well as to characterise the features of their development and reproduction in the animal body.	-
Laboratory work 3. Study of methods	Be able to select and prepare biological	8

for diagnosing protozoa of ruminants	material for the diagnosis of protozoa, apply	
_	modern methods of microscopic and	
	laboratory research, identify pathogens of	
	protozoa by morphological and biological	
	characteristics, interpret research results, and justify the choice of diagnostic methods	
	depending on the type of parasite and clinical	
	picture.	
Independent work. Treatment and	To know the basic principles of treatment of	8
preventive measures for protozoa of	protozoa in ruminants, to analyse the	
ruminants. Modern veterinary drugs.	mechanisms of action of modern	
	antiprotozoal drugs, to compare their efficacy	
	and safety, to justify the choice of drugs	
	depending on the type of pathogen, stage of	
	disease and species of animal, and to develop	
	schemes of treatment and prevention	
	measures taking into account the epizootic	
	situation and biological characteristics of parasites.	
Laboratory work 4. Study of the	Analyse the peculiarities of the epizootology	8
peculiarities of the spread, diagnosis,	of helminthic diseases of pigs, select and	Ü
treatment and prevention of helminthic	prepare biological material for diagnosis,	
diseases of pigs	apply modern methods of detection of	
	pathogens, identify parasites by	
	morphological characteristics, select effective	
	treatment and prevention measures taking	
	into account the type of parasite and the	
	peculiarities of pig husbandry, as well as evaluate the effectiveness of the applied	
	drugs and control measures.	
Independent work. Therapeutic and	To know the basic principles of treatment of	7
preventive measures for helminthic	helminthic diseases of pigs, to analyse the	
diseases of pigs. Modern veterinary	spectrum of action and mechanisms of action	
drugs.	of modern anthelmintic drugs, to compare	
	their effectiveness and safety, to justify the	
	choice of drugs depending on the type of	
	parasite and stage of infection, to develop	
	schemes of treatment and preventive	
	measures taking into account the peculiarities of pig husbandry and the epizootic situation,	
	and to assess the risks of resistance	
	development.	
Independent work. Treatment and	To know the basic principles of treatment of	7
preventive measures for entomoses,	entomoses, acaroses and protozoa in pigs, to	
acaroses and protozooses of pigs.	analyse the properties and mechanisms of	
Modern veterinary drugs.	action of modern insecticidal, acaricidal and	
	antiprotozoal drugs, to compare their efficacy	
	and safety, to justify the choice of drugs depending on the type of pathogen, stage of	
	infection and animal husbandry technology,	
	to develop comprehensive schemes of	
	treatment and prevention measures taking	
	into account the epizootic situation and	
	biological characteristics of parasites.	

Module test 1.	Biological features of the parasite-host	30
Total for module 1	system in ruminants and pigs	100
	the parasite-host system in horses, birds and c	
	ne parasite-host system of horses, birds and ca	
Lecture 5. Biological features of the	Understand the life cycle of nematodes,	-
parasite-host system in nematodes	describe the interaction of parasites with intermediate and final hosts, analyse the pathways of invasion and adaptive mechanisms of nematodes in different environments, assess the impact of parasites on the physiological processes of the host, and characterise the features of their development, reproduction and pathogenesis of infections.	
Laboratory work 5. Improvement of modern methods of diagnosis, treatment and prevention of entomoses, acaroses and protozooses of pigs	To apply modern methods of diagnosis of entomoses, acaroses and protozooses of pigs, to analyse the effectiveness of treatment and prevention measures, to identify parasites by morphological and biological characteristics, to select modern veterinary drugs taking into account the species spectrum of pathogens, to assess the impact of measures on animal health, and to develop comprehensive schemes for the control of parasitic diseases, taking into account the epizootic situation.	10
Independent work. Treatment and preventive measures for helminthiasis, entomosis, acarosis and protozoa in horses. Modern veterinary drugs	To know the basic principles of treatment of helminthiasis, entomoses, acaroses and protozoa of horses, to analyse the mechanisms of action of modern veterinary drugs, to compare their effectiveness, spectrum of action and safety, to justify the choice of drugs depending on the type of parasite, stage of infection and conditions of detention, and to develop comprehensive schemes of treatment and prevention measures taking into account the epizootic situation in the farm.	10
Lecture 6. Biological features of the parasite-host system in acanthocephalus  Laboratory work 6. Study of the	To understand the life cycle of acanthocephalic parasites, to describe the interaction between the parasite, intermediate and final host, to analyse the pathways of invasion and mechanisms of adaptation of acanthocephalic parasites to different environmental conditions, to assess the impact of parasites on the physiological state of the host, and to characterise the features of their development, reproduction and pathogenesis of infections  Analyse the epizootological features of	10
peculiarities of the spread, diagnosis, treatment and prevention of helminthiasis, entomoses, acaroses and	helminthic, entomological, acarotic and protozoal diseases of horses, select and prepare biological material for diagnosis,	

Independent work. Treatment and preventive measures for helminthiasis, entomosis, acarosis and protozoa in poultry. Modern veterinary drugs.	apply modern methods of parasite detection, identify pathogens by morphological features, select treatment and preventive measures taking into account the type of parasite and animal conditions, and evaluate the effectiveness of the drugs and control measures used.  To know the basic principles of treatment of helminthic, entomological, acarotic and protozoal diseases of poultry, to analyse the mechanisms of action of modern veterinary drugs, to compare their effectiveness, spectrum of action and safety, to justify the choice of drugs depending on the type of	10
	parasite, stage of infection and conditions of detention, and to develop comprehensive schemes of treatment and prevention measures taking into account the epizootic situation.	
Lecture. 7 Study of methods of diagnosis of poultry helminth diseases. Improvement of methods of diagnosis, treatment and prevention of entomoses, acaroses and protozoa of poultry	To apply modern methods of diagnosis of poultry helminths, to analyse the peculiarities of their spread, to improve practical approaches to the detection of entomoses, acaroses and protozoa, to select effective veterinary drugs for treatment, to develop comprehensive preventive measures taking into account the biology of parasites and poultry conditions, and to evaluate the effectiveness of the methods used.	-
Laboratory work 7. Study of methods of diagnosis of poultry helminthiasis. Improvement of methods of diagnosis, treatment and prevention of entomoses, acaroses and protozoa of poultry	To be able to select and prepare biological material for the diagnosis of poultry helminthic diseases, apply modern laboratory and microscopic methods of parasite detection, improve practical skills in the diagnosis of entomoses, acaroses and protozoa, identify parasites by morphological characteristics, select effective veterinary drugs for treatment, and develop comprehensive preventive measures taking into account the conditions of poultry keeping and the epizootic situation.	10
Independent work. Treatment and preventive measures for entomoses, acaroses and protozooses of carnivores. Modern veterinary drugs.  Lecture 8. Biological features of the	To know the basic principles of treatment of entomoses, acaroses and protozoa of carnivores, to analyse the properties and mechanisms of action of modern insecticidal, acaricidal and antiprotozoal drugs, to compare their efficacy and safety, to justify the choice of drugs depending on the type of parasite, stage of infection and characteristics of animal husbandry, and to develop comprehensive schemes of treatment and prevention measures taking into account the epizootic situation.  To understand the life cycles of protozoan	-

Laboratory work 8. Study of the peculiarities of the spread, diagnosis, treatment and prevention of helminthic diseases of carnivores. Improvement of modern methods of diagnosis, treatment and prevention of entomoses, acaroses and protozoa of carnivores	parasites, to analyse the mechanisms of interaction between the parasite and the host at the cellular and organ levels, to explain the adaptive properties of protozoa to the parasitic way of life, to assess their effect on the host immune system, and to characterise the features of reproduction, distribution and pathogenesis caused by protozoan parasites.  To know the epizootological features of the spread of helminthic diseases, entomoses, acaroses and protozoa in carnivores, to select biological material for laboratory tests, to apply modern methods of microscopic and rapid diagnostics, to identify parasites by morphological features, to select effective veterinary drugs for treatment, as well as to develop and justify comprehensive preventive measures taking into account the	10
Module test 2.	type of parasite and animal conditions.  Protozoa of animals	30
Total for module 2	2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	100
<b>Educational work</b>	$(M1 + M2)/2*0.7 \le 70$	
Exam / test	30	
Total for the course	$(Academic work + test) \le 100$	
Course project/work (if any)	-	100

8.2. Scale for assessing the knowledge of a higher education applicant

our search assessing the into through of a higher careation applicant	
Rating of the applicant for higher education, points	Grade according to the national system (exams / credits)
90-100	excellent
74-89	good
60-73	satisfactory
0-59	unsatisfactory

8.3. Assessment policy

Policy on	FOR EXAMPLE: work that is submitted late without valid reasons will be assessed	
deadlines and	at a lower grade. Resitting modules is allowed with the permission of the lecturer if	
retakes	there are valid reasons (e.g. sick leave).	
Policy on	FOR EXAMPLE: Cheating during tests and exams is prohibited (including using	
academic	mobile devices). Term papers, essays must have correct textual references to the	
integrity	literature used	
	EXAMPLE: Attendance is mandatory. For objective reasons (e.g. illness,	
Attendance policy international internship), training can take place individually (online in agreen		
	with the dean of the faculty)	

#### 9. Educational and methodological support:

- e-learning course of the discipline (on the educational portal of NULES of Ukraine eLearn https://elearn.nubip.edu.ua/enrol/index.php?id=2018);
  - lecture notes and presentations;
  - textbooks, manuals, workshops;
  - methodological materials for studying the discipline for full-time higher education students;
  - instructional and methodological materials for seminars, practical and laboratory classes;
  - individual educational and research tasks;
  - control works:
  - methodological materials for organising students' independent work.

#### 10. **Recommended sources of information**

Галат В.Ф., Березовський А.В., Сорока Н.М., Прус М.П., Євстаф'єва В.О., Галат М.В. Паразитологія та інвазійні хвороби тварин. Підручник. За ред. проф. Галат В.Ф. - Київ: Компринт, 2022. - 338 с.

Бойко Н.І., Немова Т.В., Семенко О.В. Методи ідентифікації кровопаразитів у тварин: методичні вказівки. К. : Компринт. 2021. 40 с.

Галат В.Ф., Березовський А.В., Сорока Н.М., Прус М.П., Євстаф'єва В.О., Галат М.В. Глобальна паразитологія. Підручник / за ред. проф. Галат В.Ф.— К.: ДІА, 2014. — 454 с.

Сорока Н.М., Прус М.П., Семенко О.В., Пашкевич І.Ю, Галат М.В., Слободян Р.О.

Методичні вказівки "Лабораторна діагностика протозоозів тварин" К.: Компринт. 2021. 56 с.

Сорока Н.М., Прус М.П., Семенко О.В., Пашкевич І.Ю, Галат М.В., Слободян Р.О.

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Прус М.П., Семенко О.В., Литвиненко О.П., Зворигіна В.Є. Рекомендації з діагностики саркоцистозу тварин. К. : ДНДІЛДВСЕ, 2016. 18 с.

Галат В. Ф., Березовський А. В., Сорока Н. М., Прус М. П., Євстаф'єва В.О., Галат М. В. Інвазійні хвороби жуйних тварин: навчальний посібник; за ред. проф. В. Ф. Галата. Полтава :Укрпромторгсервіс, 2012. 144 с.

#### **Supporting literature**

- 1. Практикум із паразитології / В.Ф. Галат, Ю.Г. Артеменко, М.П. Прус та ін.; за ред. В.Ф. Галата. К.: Урожай, 2009. 192 с.
- 2. Атлас гельмінтів тварин. І.С. Дахно, А.В. Березовський. В.Ф. Галат та ін. К.: Ветінформ, 2001. 118 с.
- 3. Сорока Н.М., Кичилюк Ю.В., Пашкевич І.Ю. Еймеріоз і ізоспороз свиней. Монографія. К.: «ЦП «КОМПРИНТ», 2020. 216 с.
- 4. Сорока Н.М., Гончаров С.Л., Пашкевич І.Ю. Параценогонімоз коропових риб. Монографія. К.: «ЦП «КОМПРИНТ», 2018. 149 с.
- 5. Сорока Н.М., Овчарук Н.П., Пашкевич І.Ю. Шлунково-кишкові стронгілятози великої рогатої худоби. Монографія. К.: «ЦП «КОМПРИНТ», 2017. 178 с.
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#### **Information resources**

- 1. The most common invasive diseases of domestic animals <a href="http://ir.znau.edu.ua/bitstream/123456789/2533/1/Invazijni%20hvoroby%20svijskyh%20tvaryn\_201">http://ir.znau.edu.ua/bitstream/123456789/2533/1/Invazijni%20hvoroby%20svijskyh%20tvaryn\_201</a> 2.pdf
- 2. Galat VF, Berezovsky AV, Prus MP, Soroka NM, Parasitology and invasive diseases of animals. Workshop https://www.studmed.ru/view/galat-vf-berezovskiy-av-prus-mp-soroka-nm-parazitologya-ta-nvazyn-hvorobi-tvarin-praktikum 4c269433360.html
- 3. Electronic atlas of helminths. <a href="https://mmatilevichusv.wixsite.com/parasitology/elektronnij-atlas">https://mmatilevichusv.wixsite.com/parasitology/elektronnij-atlas</a>
  - 4. Parasitic (invasive) diseases of animals // www.referatcentral.org.ua'
- 5. Distribution of major ruminant helminthic diseases and development of ...  $\underline{www.lib.ua-ru.net/diss/cont/345414.html}$ 
  - 6. Helminthoses of animals https://www.ncbi.nlm.nih.gov/books/NBK8282/