#### MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE Sumy National Agrarian University

Department of Obstetrics and Surgery

" Approved "

Head of the department

Krayevsky A.Y. 2020

### WORKING PROGRAM OF EDUCATIONAL DISCIPLINE

## PP.30 Surgical diseases of productive animals

Specialty: 21f"Veterinary medicine"

Educational program: "Veterinary Medicine"

Faculty: Veterinary Medicine

2020 - 2021 academic year

Work program on Surgical diseases of animals for students on specialty 211 "Veterinary Medicine".

sel

Developer: PhD, associate professor Y. Musienko

Work program approved at the meeting of the department obstetrics and surgery.

Protocol from "22" June 2020 № 17

Head of the Department of Surgery \_\_\_\_\_ (Prof. Krayevsky A.Y.)

Agreed:	$\bigcap$
Guarantor of the educational program	(Ulko L.G.)
Dean Aff	(Nechyporenko O.L.)
Methodist of the Department of Educa licensing and accreditation	tion Quality, M. Baranik)

Registered in the electronic database: Date: 08.07 2020.

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The name of indicators	The branch of knowledge, the direction of training, the educational and qualification level	Characteristics of the academic discipline daytime education
Amount of credits - 3	Knowledge branch: 21 Veterinary Medicine	Normative
Modules - 2	Specialty:	Year of preparation:
Modular modules: 2	211 - «Veterinary medicine»	2020-2021
		Course 4 semester 7
The amount of hours - <b>90</b>		lectures
	_	16 Practical, seminar
Weekly hours for	Educational and	<u> </u>
daytime training:	qualification level:	
classroom - <b>3</b> independent work	master	independent work
of the student - $3$		44 -
		Individual tasks: -
		Type of control: <i>credit</i>

### 1. Description of the discipline

**Note.** The ratio of the number of hours of classroom hours to independent and individual work is: for the daytime form of education -51,1/48,9 (46/44)

### 2. Goal and objectives of discipline

### • target:

• formation of a system of special theoretical knowledge and practical skills in the diagnosis, treatment and prevention of surgical pathology in animals.

### • The task:

• study of the surgical pathology of individual parts of the body of the animal body, its organs and systems, local features of the onset and course of the disease, differential diagnosis, therapeutic and preventive measures.

•

As a result of studying the academic discipline, the student must:

### know:

• Etiology and pathogenetic features of the clinical manifestation of various nosological forms of surgical pathology in animals of different species, on the basis of which an understanding of the essence of therapeutic preventive measures in the case of surgical diseases is formed.

### • be able to:

• To master modern methods for diagnosing surgical diseases and monitor them, diagnose them, prescribe rational methods of treatment and prevention, and have practical skills in surgical care for animals.

### 3. Program educational disciplines

(hardened Science-methodical joy Science and methodology center "Agroosvita" Ministry of Science and Science of Ukraine 30.10.2017).

# Module 1. *Diseases in the head, neck and neck.* Content module 1.

**Topic 1.** *Diseases in the head, neck and neck.* Paralysis of the trigeminal and facial nerves. Actinomycosis. Etiology, pathogenesis, treatment, prevention. Diseases in the withers area. Deep purulent-necrotic processes withers.

**Topic 2.** *Diseases of the eyes.* Diseases of the eyelids. Inflammation, inversion and reversal of the eyelids, inflammation of the lacrimal gland. Diseases of conjunctivitis and cornea. Conjunctivitis, keratitis. inflammation of the lacrimal gland.

**Topic 3.** *Diseases of the eyes.* Retinal diseases. Pathology of the chamber fluid and the lens. Glaucoma. Retinal diseases, purulent panalmitmitis, retrobulbar phlegmon. Falling of the eyeball.

Module 1. 2. Diseases in the chest wall and lower back. Diseases in the abdomen. Pislyakastrazycii complications.

### **Content module 2.**

**Topic 1.** *Diseases in the chest wall and lower back.* Wounds of chest wall. Pneumothorax. Hemotorax. Spondylosis.

**Topic 2.** *Diseases in the abdomen. Pislyakastrazycii complications.* Hernias. Peritonitis. Features pislyakastratsyonnih complications in sheep. Pislyakakstranyviny complications in the guinea pigs.

**Topic 3.** *Andrological diseases.* Defeat of the penis, penis. Defeats, organs of the simian bag and additional sex glands.

Module 3. *Diseases of the thoracic and pelvic extremities*. Content module 3.

**Topic 1.** *Diseases of the thoracic extremity.* Diseases of the nerves, muscles of the shoulder girdle; Bursitis, omartrites and omarthrosis; Diagnosis, treatment for diseases of the thoracic extremities.

**Topic 2.** *Diseases of the thoracic extremity.* Diseases in the area of the wrist and pastern; Arthritis of wrist and frontal joints Carpal aseptic tenosynovitis. Diagnosis and treatment.

**Topic 3.** *Diseases of the pelvic limb.* Diseases of the nerves; Spastic paresis; Gonath and gonarthrosis; Tarsitis, tarsartrosis; Tarsosteocritosis; Tarsalni aseptic tendovaginitis; Lateral, collateral desmoiditis; Diagnosis, treatment.

Module 4. Diseases of hoofs and limbs.

### **Content module 4.**

**Topic 1.** *Diseases of hoofs and limbs.* pododermatitis; laminitis; Ungulomycosis; Methods of treatment and prevention. Deformation of extremities.

**Topic 2.** *Diseases of hoofs and limbs.* Phlegmonous processes; Purulent gift; Acute aseptic inflammation of the spine joint Methods of treatment and prevention.

**Topic 3.** *Diseases of hoofs and limbs.* Diseases of hoofs characteristic of even-hoofed animals; Necrosis of the cartilage cartilage; Chronic aseptic sodomy. Methods of treatment and prevention.

4. Structure of the academic discipline						
Names of content modules and	number of hours					
topics			iı	ncludin	ıg	
	total	1	Р	lab	and all	s.r.
1	2	3	4	5	6th	7th
Module 1. Diseases in	Module 1. Diseases in the head, neck and neck.					
Content module 1. Diseases in the	head, n	eck an	d neck.			
Topic 1. Diseases in the head, neckand neck.Paralysis of the trigeminaland facial nerves.Actinomycosis.Etiology, pathogenesis, treatment,prevention.Diseases in the withersarea.Deep purulent-necroticprocesses withers.	10	2	2			6

4. Structure of the academic discipline

		r				
Topic 2.Diseases of the eyes.Diseasesoftheeyelids.Inflammation, inversion and eversioneyelid, inflammation of the lacrimalgland.Diseases of conjunctivitis andcornea.Conjunctivitis, keratitis.Inflammation of the lacrimal gland.	12	2	4			6
Topic 3.Diseases of the eyes.Retinal diseases.Pathology of thechamberfluidandthelens.Glaucoma.Retinal diseases, purulentpanophthalmitis,retrobulbarphlegmon.Falling of the eyeball.	8		4			4
<b>Together with content module 1</b>	30	4	10	-	-	16
Content module 2. Diseases in the d	chest wa	ll, wais	t and a	bdome	n.	
<b>Topic 1.</b> <i>Diseases in the chest wall</i> ,						
<i>waist and abdomen.</i> Wounds of chest wall. Pneumothorax. Hemotorax. Spondylosis. Hernias. Peritonitis.	10	2	4			4
Topic 2. Pislyakastrachenii complications Andrological diseases. Defeat of the penis, penis. Lesions, organs of the simian's sac and additional sex glands. Features of writing of complications in rams. Pislyakakstranyviny complications in the guinea pigs.	10	2	2			6
<b>Together with content module 2</b>	20	4	6			10
Module 3. X Spa	rrow of	the ext	remitie	S		
<b>Topic 1.</b> <i>Diseases of the thoracic</i> <i>extremity.</i> Diseases of the nerves, muscles of the shoulder girdle; Bursitis , omartrites and omarthrosis; Diseases in the area of the wrist and pastern; Arthritis of wrist and frontal joints Carpal aseptic tenosynovitis. Diagnosis and lichenvnia.Diagnostics, treatment for diseases of the thoracic extremities.	12	2	4			6
Topic 2. Diseases of the pelviclimb.Diseases of the nerves;Spastic paresis;Gonath andgonarthrosis;Tarsitis, tarsartrosis;	12	2	4			6

Tarsosteocritosis; Tarsalni aseptic tendovaginitis; Lateral, collateral desmoiditis; Diagnosis, treatment.						
<b>Together with content module 3</b>	24	4	8			12
Content module 4. D	iseases a	of hoofs	s and li	mbs.		
<b>Topic 1.</b> pododermatitis; laminitis ; Ungulomycosis; Phlegmonous processes; Purulent gift; Acute aseptic inflammation of the spine joint Methods of treatment and prevention. Deformation of extremities.	12	2	4	-	-	6
<b>Topic 2.</b> Diseases of hoofs characteristic of even-hoofed animals; Necrosis of the cartilage cartilage; Chronic aseptic sodomy. Methods of treatment and prevention.	10	2	2	-	-	6
Together with content module 4	22	4	6	-	-	12
The amount of hours	90	16	30		-	44

### 5. Topics and plan for lecture classes

N⁰	Topic Title	Amount hours
1	Topic 1. Diseases in the head, neck and neck. Paralysis	
	of the trigeminal and facial nerves. Actinomycosis.	2
	Etiology, pathogenesis, treatment, prevention. Diseases in	2
	the withers area. Deep purulent-necrotic processes withers.	
2	Topic 2. Diseases of the eyes. Diseases of the eyelids.	
	Inflammation, inversion and reversal of the eyelids,	
	inflammation of the lacrimal gland. Diseases of	2
	conjunctivitis and cornea. Conjunctivitis, keratitis.	
	Inflammation of the lacrimal gland.	
3	Topic 3. Diseases of the eyes. Retinal diseases.	
	Pathology of the chamber fluid and the lens. Glaucoma.	2
	Retinal diseases, purulent panalmitmitis, retrobulbar	Z
	phlegmon. Falling of the eyeball.	
4	Topic 4. Diseases in the chest wall, waist and abdomen	
	Wounds of chest wall. Pneumothorax. Hemotorax.	2
	Spondylosis. Hernias. Peritonitis.	
5	Topic 5. Complications after castration. Andrological	2
	diseases. Defeat of the penis, penis. Defeats, organs a	۷

	sepulchral bag and additional gonads. Features of complications after castration in sheep.	
6	<i>Topic</i> 6. <i>Diseases of the thoracic extremity.</i> Diseases of the nerves, muscles of the shoulder girdle; Bursitis, omartrites and omarthrosis; Diseases in the area of the wrist and pastern; Arthritis of the wrist and frontal joints. Carpal aseptic tendovaginitis. Diagnosis and treatment. Diagnosis, treatment for diseases of the thoracic extremities.	2
7	<i>Topic</i> 7. <i>Diseases of the pelvic limb</i> . Diseases of the nerves; Spastic paresis; Gonath and gonarthrosis; Tarsitis, tarsartrosis; Tarsosteocritosis; Tarsalni aseptic tendovaginitis; Lateral, collateral desmoiditis; Diagnosis, treatment.	2
8	<i>Topic</i> 8. Pododermatitis; laminitis ; Ungulomycosis; Phlegmonous processes; Purulent gift; Acute aseptic inflammation of the spine joint. Methods of treatment and prevention. Deformation of extremities.	2
	Together:	16

### 6. Themes of practic exercises

Nº	Topic Title	Amount hours
1.	<i>Topic 1. Diseases in the head.</i> 1. A study of the nature of the development of diseases in the head. 2. Study of methods of treatment for wounds in the head region. 3. Methods of examination of the oral cavity. 4. Study of dental diseases and	2
	methods of treatment <i>Topic 2. Diseases in the neck and neck.</i> 1. Justification of the diagnosis, prognosis, treatment. 2. Diagnosis of pathological processes in the <i>occiput</i> . 3. Diagnosis of pathological processes in the area of the occipital connection.	
2.	<b>Topic 3. Ophthalmology.</b> 1. Studying the classification of uveitis, their diagnosis and treatment. 2. Principles of treatment for endophthalmitis. 3. The study of the apparatus of vision in animals and the clinical forms of its defeat. 4. Treatment general methods of studying animals with eye damage. 5. Study of modern diagnostic and treatment methods for conjunctivitis and keratitis 6. Investigation of the refractive media of the eye. 7. Study of operations in the eye area.	2

3.	<i>Topic 4. Diseases in the chest.</i> 1. Treatment of methods of treatment of chest wall wounds, their research and	2
	differentiation.	
4.	<i>Topic 5. Diseases in the chest.</i> 1. The study of aseptic withers (dermatitis, eczema, diffuse edema, lymphoextravazates, hematomas, bursitis). Diagnosis, prevention, treatment. <i>Topic 6. Diseases in the abdomen. Plan 1.</i> Study signs of animal diseases from swelling in the abdominal wall. 2. Classification of hernias and methods of treatment. 3. Damage to the organs of the thoracic and abdominal cavities. Principles of treatment and surgical tactics. 4. Study of diseases in the thoracic and abdominal cavities. 6.	2
~	Pleuropulmonal shock. 7. Mechanical ileus. 8. Peritonitis.	
5.	Topic 7. 1. Diseases of the urino-genital organs.1.Development of the technique of surgical intervention.2.Diagnosis of diseases of the urino-genital organs, methods of treatment. Diagnosis of early and late complications.	2
6.	<i>Topic 8. Diagnosis of diseases of the thoracic extremity.</i> plan: 1. Clinical methods for diagnosis of diseases of the thoracic extremity; 2. Special methods of research. 3. Study of clinical methods of diagnosing diseases in the area of the elbow joint and forearm; 4. Study of special research methods; 5. Development of treatment methods for diseases in the area of the elbow joint and forearm.	2
7.	Topic 9. Diseases of the flexor tendons and the interosseous	2
	<ul> <li><i>middle muscle.</i> plan: 1. Study of clinical methods for diagnosis of flexor tendon tendencies and interosseous muscle;</li> <li>2. Study of special research methods; 3. Development of methods for treating flexor tendon diseases and interosseous muscle. 4. Study of clinical methods of diagnostics of the diseases of the wrist joint 5. Study of special research methods;</li> <li>6. Development of methods for treatment of wrist joint diseases and their differential diagnosis.</li> </ul>	2
8.	<i>Topic 10. Diseases of the hip joint.</i> plan: 1. Study of clinical methods of diagnosis of hip joint diseases 2. Study of special research methods; 3. Development of treatment methods for diseases of the hip joint. 4. Study of clinical methods of diagnosis of diseases of the femoral muscles; 5. Study of special research methods; 6. Development of treatment methods for diseases of the femoral muscles.	2
9.	Topic 11. Purulent persecutions and tarsitis.plan:1.Studying of clinical methods of diagnostics of purulent gonitisand tarsitiv;2.Study of special research methods;3.	2

10.	<i>Topic 12. Orthopedics.</i> plan: 1 . Study of anatomy and physiology of the finger in animals; 2. Development methods	2
	of studying animals with hoof and limb diseases; 3. Analysis of	
	the general principles of treating animals with hoof and limb	
	diseases. 4. Development of methods and methods of clearing; 2 The study of taking measurements from the booft 5	
	. The study of taking measurements from the hoof; 5. Analysis kinds of horseshoes, special horseshoes; 6. Treatment of	
	orthopedic podkovki.	
11.	Topic 13. Ungulomycosis, cracks and hooves. plan: 1.	2
	Studying of clinical methods of diagnostics of ungulomycosis,	
	cracks and rosse of hooves; 2. Study of special research methods;	
	3. Development of treatment methods for ungulomycosis, cracks	
10	and hooves.	
12.	Topic 14. Verucian dermatitis, diseases of the shuttle block.	4
	plan: 1. Development of clinical diagnostic methods for	
	vertebral dermatitis, diseases of the shuttle block; 2. Study of special research methods; 3. Analysis methods of treatment	
	for vertebral dermatitis, diseases of the shuttle block. 4.	
	Development of clinical diagnostic methods Laminitis; 5. Study	
	of special research methods; 3. Analysis methods of treatment	
	with Laminitis	
13.	<i>Topic 15. Purulent pododermatitis.</i> plan: 1. Study of clinical	4
	methods of purulent pododermatitis diagnosis; 2. Study of	
	special research methods; 3. Development of treatment methods	
	for purulent pododermatitis. 4. Study of clinical methods for	
	the diagnosis of purulent and aseptic gifts; 5. Study of special	
	research methods; 6. Development of treatment methods for	
purulent invitations		
	Together	30

### 7. Independent work

N⁰	Topic Title	Amount
		hours
1	<i>Topic 1.</i> Development of methods of treatment of animals	4
	with paralysis of the facial nerve. Hyperkinesis of the tongue.	
2	<i>Topic 2.</i> Development of methods for treating wounds and	4
	phlegmons of the intermaxillary region. 2. Bursits withers.	
3	Topic 3. Development of treatment methods for foreign	4
	bodies and their influence on tissues.	
4	<i>Topic 4:</i> Diseases in the thoracic wall.	4
5	<i>Topic 5.</i> Andrology. Diseases of prepubia.	6
6	<i>Topic 6.</i> Clinical methods for the diagnosis of articular	6
	contractures and granulomatous arthritis; Special research	
	methods; Methods of treatment of articular contractures and	
	granulomatous arthritis. Diagnosis of muscle diseases,	
	modern principles of treatment. Clinical methods for	
	diagnosing muscle diseases, Special research methods;	
	Methods of treatment for myositis and myopathy. Conduction	
	anesthesia of the nerves of the thoracic extremity Indications	
	for conductive anesthesia of the nerves of the thoracic	
	extremity; Types and methods of novocaine.	
7	<i>Topic 7.</i> Diseases of flexor tendons and interosseous middle	4
	muscles. 1. Clinical methods for diagnosis of flexor tendon	
	diseases and interosseous muscle; 2. Special research	
	methods; 3. Methods of treatment of flexor tendon diseases	
	and Interosseous middle muscle. Purulent drive and Tarsit.	
	4. Clinical methods of diagnosis purulent persecutes and	
	tarsitiv; 5. Special research methods; 6. Methods of treatment	
	for purulent drives and tarsit.	
8	<i>Topic 8.</i> Mortelarro's disease. plan: 1. Clinical methods	4
0	for diagnosis of Mortelarro's disease; 2. Special methods of	
	research; 3. Methods of treatment for Morelarro disease. 4.	
	Clinical methods of diagnosis Laminitis; 5. Special research	
	methods; 6. Methods of treatment for Laminitis. <i>Orthopedic</i>	
	<i>hoof trimming and horse horseshoes.</i> plan: 1. Methods	
	and methods of clearing; 2. Removal of the measurement	
	from the hoof; 3. Types of horseshoes, special horseshoes; 4.	
	Orthopedic horseshoes.	
9	Topic 9. Methods of conductor anesthesia of hoof	4
,	segments. Operations on hoofs. plan: 1. Indications for	•
	conductive anesthesia of the nerves of the thoracic extremity;	
	2. Types and methods of novocaine; 3. Resection operations	
	on the hoof. <i>Ungulomycosis, cracks and hooves.</i> plan: 1	

. Clinical methods of diagnostics of ungulomycosis, cracks	
and rosse of hooves; 2. Special methods of research; 3.	
Methods of treatment for ungulomycosis, cracks and hooves.	
Together	44

### 8. Individual tasks

### 1. Preparation of abstracts:

1.1. Statico - dynamic apparatus of extremities. Diseases in the shoulder and shoulder area.

1.2. Diseases in the carpal joint, pastern.

1.3. The defeat of nerves, diseases in the area of croup, thigh and lower leg. Fractures of bones.

1.4. Diseases in the region of the hip, knee, and forearm joints. Diseases in the field of mold.

1.5. The structure, function and metabolism of hooves. Mechanism of fingers and limbs.

1.6. Deformation of extremities.

1.7. Pododermatitis. Ungulomycosis. Phlegmonous processes.

1.8. A purulent gift. Acute aseptic inflammation of the spine joint.

### 9. Methods of teaching

### 1. Methods of learning by source of knowledge:

1.1. *Verbal: a* story, an explanation, a lecture, working with a book (reading, extracts, notes, making supporting notes, etc.).

1.2. *Visible:* demonstration of educational videos, monitoring of sick animals.

1.3. *Practical:* laboratory method (investigation of wound fingerprints and exudate), practical work (examination, research, treatment of surgically sick animals), production-practical methods (trips to the farm).

### 2. Methods of teaching by the nature of the logic of cognition.

2.1. *Analytical: the* study of surgical diseases of individual systems, organs and parts of the body of animals.

2.2. *Methods of synthesis: an* analysis of an anamnesis, a clinical study of a sick animal.

2.3. *Inductive method: the* study of clinical signs and the diagnosis of the disease on their basis.

2.4. *Deductive method:* differential diagnosis of diseases.

## **3.** Methods of teaching on the nature and level of independent thinking activities of students.

3.1. *Partial-search (heuristic):* according to the instruction of the teacher, the search for data on the Internet, literary sources.

3.2. research

3.4. *Reproductive* : application of the studied theoretical material in practice.

3.5. *Explanatory-demonstrative:* explanations of incomprehensible questions with demonstration, tables, diagrams, formulas, photos and video material. Demonstration of diagnostic and therapeutic methods on live animals.

**4.** Active teaching methods - use of technical teaching aids (multimedia lectures), occupational classes, self-assessment of knowledge, imitative methods of teaching - implementation of situational tasks using teaching and control tests, use of basic lecture notes.

**5. Interactive learning technologies** - use of multimedia technologies, viewing video materials on the topic while giving lectures and practical exercises, using the case-study method, interactive training, student cooperation.

### **10. Methods of control**

1. Rating control on a 100-point scale of ESKT estimation

2. Intermediate control during the semester (intermediate certification)

3. Policiary evaluation of current work of students:

- the level of knowledge demonstrated in practical and laboratory studies;

- Active during the discussion of issues submitted to the class;

- independent study of the topic as a whole or separate issues;

- test results;

- written assignments during the performance of the control works;

- production situations.

4. Direct accounting in the final assessment of student performance of a specific individual task:

- course work (project);

- study and research work;

- educational and practical research with presentation of results and the like.

	C	urrent	testing	and inc	lepend	Together with modules and CPC	attestation	Final test - exam	amount			
module 1				Module 2				CDS				
informative module 1 - 10 points		Content module 2- 10 points		Content module 1 - 20 points		content module 2 10 points						
T1	T2	T3	T4.5	T6	T7	T 8	Т9	15	5 5 (40 + 15)	15	30	100
5	5	3	5	5	5	5	5		、 - /			

### 9. Distribution of points that students receive

#### Scale of assessment: national and ECTS

The sum of		Evaluation of the national scale				
points for all kinds of learning activities	Evaluation of ECTS	for examination, course project (work), practice	for credit			
90 - 100	Α	excellent				
82-89	B	rood				
74-81	S	good	credited			
64-73	D	satisfactorily				
60-63	E	satisfactority				
35-59	FX	unsatisfactorily, with resit	not credited with the ability to resit			
0-34	F	unsatisfactorily with the mandatory repeated study of discipline	not credited with a mandatory re- examination of discipline			

### **11. Methodological support**

1. Surgical diseases of the fingers of cattle // Methodical instructions for students of the Faculty of Veterinary Medicine and students of the Institute of Postgraduate Training. Belaya Tserkov, 1996. 31 p.

2. Methodical recommendations for independent study of general and special surgery. Dnipropetrovsk, 2004. 72 p.

3. Methodical recommendations on writing and design course work (history of the disease) / Kraevsky A.I., Stotsky AG, Lazorenko A.B. and others / Sumy, 2009. 24 p.

#### 12. Recommended literature Basic

1. General Veterinary Surgery / I.S. Panko, VM Vlasenko, MV Rublenko and others; under the ed .. IS Panko (second edition, supplementary and redone) - Belaya Tserkov: Belotserkov state agrarian university, 2008. 328 p.

2. Special Veterinary Surgery / I.S. Panko, VM Vlasenko, AA Hamota and others; under the ed .. IS Panko - Belaya Tserkov: BGAU, 2003. 416 p.

3. General Veterinary Surgery / / I.C. Panko, VM Vlasenko, VI Izdepsky and others - Belaya Tserkov: BGUU, 1999. 264.

4. Private veterinary surgery / B.S. Semenov, AV Lebedev, AN Eliseev and others, ed. B.S. Semenova and AV Lebedev - M.: Kolos, 1997. 496 pp.

5. General Veterinary-Medical Surgery / V.B. Borisevich, B.V. Borisevich, AF Petrenko, N.M. Khomin: by edition. VB Borisevich - M.: Scientific World, 2001. 274 p.

### Auxiliary

1. Vlasenko V.M., Tikhonyuk L.A. Veterinary anesthesiology. - Belaya Tserkov, 2003. 336.

2. Veterinary orthopedy of the disease of hooves and extremities: Posib. for studio agrar shut up Education of I-IV levels of accreditation with specialist. "Veterinary Medicine" / VB Borisevich, B.V. Borisevich, AF Petrenko, N.M. Khomin - M.: DIA, 2007. 136.

3. Tumors of animals: etiology, pathogenesis, diagnostics, complex therapy / AA Hamota, VI Metel, Ya. Krupnik, AR Misaki - Lviv: Galician Publishing Union, 2007. 168 p.

4. Borisevich V.B., Borisevich B.V. and other Veterinary-medical ophthalmology: Textbook / Ed. .. V.B. Borisevich M.: Aristheus, 2006. 212 p.

8. Izdepsky VI, Stotsky AG, Kharenko N.I. and other Physiotherapy with noncontagious animal diseases. Sumy, 2006. 132 p.

Electronic resources https://onlinelibrary.wiley.com/journal/1532950x

https://www.acvs.org/veterinary-surgery-journal https://en.wikipedia.org/wiki/Veterinary\_surgery