Ministry of Agriculture of the Russian Federation
Federal State Budgetary Educational Institution
of Higher Education
"St. Petersburg State University of Veterinary Medicine"

APPROVED BY
Vice-Rector for Educational
Work and Youth Policy
_____ Sukhinin A.A.
May 6, 2024

Department of feeding and breeding of animals

EDUCATIONAL WORK PROGRAM
for the discipline

«MEDICINAL AND POISONOUS PLANTS»

The level of higher education
SPECIALIST COURSE

Specialty 36.05.01 Veterinary Medicine
Full-time education

Education starts in 2024

Reviewed and adopted
at the meeting of the department
on April 27, 2024.
Protocol No. 10

Head of the Department
of Feeding and Breeding of Animals
Candidate of Veterinary Sciences, Associate Professor
_____ Suyazova I.V.

Saint Petersburg
2024

1. AIMS AND OBJECTIVES OF THE DISCIPLINE «MEDICINAL AND POISONOUS PLANTS»

The main purpose of the discipline "Medicinal and poisonous plants" in the training of veterinarians is to give the student the necessary theoretical and practical knowledge in the use of medicinal, poisonous, harmful and fodder plants for the treatment, feeding of animals, as well as for the prevention of poisoning.

In order to achieve the set goal it is necessary to solve the following tasks:

a) General educational task is to study the structure and composition of medicinal plants;

b) Applied task is to study the methods of preparation of various medicinal forms from plant raw materials;

c) Special task is to study different groups of medicinal plants according to their effect on the animal organism; study of frequently occurring poisonous plants and study of harmful plants that cause spoilage of agricultural animal products.

2. THE LIST OF THE PLANNED RESULTS OF THE DISCIPLINE (MODULE), CORRELATED WITH THE PLANNED RESULTS OF THE REALISED EDUCATIONAL PROGRAM

As a result of mastering the discipline, the student is prepared for the following types of activities, in accordance with the educational standard of the FSE on 36.05.01 "Veterinary Medicine".

Area of professional activity:

13 Agriculture

2.1. The student's competencies formed (acquired) as a result of mastering the discipline

The education of the discipline should form the following competencies:

a) **Professional competencies (PC):**

PC-9. Development of recommendations for special feeding of sick animals for therapeutic purposes.

PC-9 $_{ID-1}$ - To know the types of dietary regimes, the principles of feed choice, using digital technologies, norms, feeding regimes in animal diet therapy.

3. THE PLACE OF DISCIPLINE IN THE STRUCTURE OF THE MPEP

The discipline B1.V.DV.03.01 "Medicinal and poisonous plants" is a discipline of choice of the federal state educational standard of higher education in the speciality 36.05.01 "Veterinary medicine" (specialist level).

It is learnt: in the 2nd semester.

When studying the discipline "Medicinal and poisonous plants" the knowledge and skills acquired by students during the mastering of disciplines: Latin language, inorganic and analytical chemistry, organic and physical chemistry, biological chemistry are used. The discipline "Medicinal and poisonous plants" is the basis on which the study of subsequent disciplines such as:

1. Toxicology
2. Veterinary pharmacology
3. Animal feeding with the basics of fodder production
4. Animal hygiene
5. Internal non-communicable diseases
6. Pharmacognosy

4. THE SCOPE OF DISCIPLINE AND TYPES OF ACADEMIC WORK

4.1. The scope of the discipline for full-time education

Type of educational work	Hours	Semester
		2
Classroom classes (total)	**37**	**37**
Including:		
Lectures, including interactive forms	10	10
Practical (PP), including interactive forms, among which are:	27	27
Practical training (PT)	4	4
Self-study	**35**	**35**
Type of intermediate and final certification (credit, exam)	Credit	Credit - 2
Total labor intensity: hours/credits	**72/2**	**72/2**

5. THE CONTENT OF THE DISCIPLINE AND TYPES OF CLASSES
5.1. The content of the discipline (full-time education)

№	The title	Achieved competences	Semesters	Types of academic work, including students' self-study and labor intensity (in hours)			
				Lectures	Practical lessons	Practical training	Self-study
1	Introduction. History of study and use of medicinal plants	**PC-9** - Development of recommendations for special feeding of sick animals for therapeutic purposes. **PC-9** $_{ID-1}$ - To know the types of dietary regimes, the principles of feed choice, using digital technologies, norms, feeding regimes in animal diet therapy.	2	2			4
2	Chemical composition of medicinal plants. Main active substances of plants.		2	2			2
3	Morphology of leaf shoot, flower inflorescence fruit, root		2		5	1	2
4	Rules for harvesting and storage of medicinal plant raw materials.		2	2			3
5	Medicinal plants of different natural zones. Preparation of medicinal preparations from plant raw materials		2	2			2
6	Plants used in cardiovascular pathologies		2		2	1	2
7	Plants with expectorant properties		2		3		2
8	Medicinal plants, acting on the gastrointestinal tract.		2		2	1	2
9	Diuretic medicinal plants. Choleretic medicinal plants.		2		3		2
10	Medicinal plants diaphoretic and antipyretic. Blood-stopper medicinal plants.		2		2	1	2
11	Anthelmintic plants. Vitamin plants.		2				2
12	Plants that excite the central nervous system. Plants that calm the central nervous system.		2			1	2

	Plants with antispasmodic properties.						
13	Plants used in skin diseases.		2				2
14	Feed plants with medicinal properties		2		3		4
15	Poisonous plants of meadows and pastures. Harmful plants of natural forage lands.		2	2	3		2
TOTAL				**10**	**23**	**4**	**35**

6. THE LIST OF EDUCATIONAL AND METHODOLOGICAL SUPPORT FOR STUDENTS' SELF WORK

6.1. Guidelines for self – work

1. Vinogradova N.D. Medicinal and poisonous plants. Methodical instructions for mastering the discipline and performing independent work for students on speciality 36.05.01 "Veterinary science" full-time, part-time and correspondence forms of education. - SPb.: SPbGUVM. - 2020.- Text : electronic // (Access mode: for authorization. users of the EB SPbGUVM).

6.2. Literature for self-work

1. Arestov, I.G. Veterinary toxicology: textbook / Arestov Ivan Georgievich, N.G. Tolkach; Edited by I. G. Arestov. G. Arestov. - Mn.: Urazhai, 2000. - 343 p.: ill. - (Textbooks and manuals for higher educational institutions). - ISBN 985-04-0412-4: 83-63. - Text (visual): direct. Quantity - 4 copies.
2. Vilner, A.M. Feed poisoning. - 5th ed., corrected and supplemented. - L.: Kolos, Leningr. Leningrad Branch, 1974. - 408 c. - 1-03. - Text (visual): direct. Quantity - 16 copies.
3. Kolomeychenko, V. V. Kormoproizvodstvo: textbook / V. V. Kolomeychenko. - Saint-Petersburg: Lan, 2015. - 656 c. - ISBN 978-5-8114-1683-7. - Text : electronic // Lan : electronic library system. - URL: https://e.lanbook.com/book/56161 (accessed: 04/27/2024).
4. Korobov, A.V. Medicinal and poisonous plants in veterinary medicine: textbook: rec UMI universities of the Russian Federation / Korobov Alexander Vasilievich, Bushukina Olga Sergeevna, Sbitneva Maria Nikolaevna. - SPb.: Lan, 2007. - 256 c. - (Textbooks for universities. Special literature). - ISBN 978-5-8114-0735-4. - Text (visual): direct. Quantity - 9 copies.
5. Limarenko, A. A. Feed poisoning of farm animals: textbook, supplemented by the Ministry of Agriculture of the Russian Federation / Limarenko Alexander Alexandrovich, Bazhov Gennady Mikhailovich, Baranikov Anatoly Ivanovich. - SPb.: Lan, 2007. - 384 p.: ill. - (Textbooks for universities. Special literature). - Text (visual): direct. - Qol-1ekz.
6. Naumkin, V.N. Nutritional and medicinal properties of cultivated plants: textbook / V.N. Naumkin, N.V. Kotsareva, L.A. Manokhina, A.N. Kryukov. - Saint-Petersburg: Lan, 2015. - 400 c. - ISBN 978-5-8114-1908-1. - Text: electronic // Lan: electronic-library system. - URL: https://e.lanbook.com/book/67475 (accessed: 04/27/2024).

7. THE LIST OF BASIC AND ADDITIONAL LITERATURE NECESSARY FOR THE EDUCATION OF THE DISCIPLINE

7.1. Basic literature

1. Kornilova V.A. Medicinal and poisonous plants: methodological guidelines / V.A. Kornilova. - Samara: SamGAU, 2019. - 26 c. // Electronic library system "Lan".: URL: https://e.lanbook.com/book/123532 (accessed: 04/26/2024).

2 Medicinal plants in veterinary practice: reference. / Rabinovich Moses Isaakovich. - Moscow: Agropromizdat, 1987. - 288 c. - Text: electronic // (Access mode: for authorization. users of the SPbGUVM EB).

7.2. Additional literature

1. Torikov, V. E. Scientific foundations of agronomy: textbook / V. E. Torikov, O. V. Melnikova. - 2nd ed., er. - Saint-Petersburg : Lan, 2019. - 348 c. - ISBN 978-5-8114-2604-1. - Text : electronic // Lan : electronic-library system. - URL: https://e.lanbook.com/book/112064 (accessed: 04/27/2024). - Access mode: for authorised users.
2. Veterinary toxicology: on speciality "Veterinary" / Khmelnitsky Grigory Aleksandrovich ; G. A. Khmelnitsky, V. N. Loktionov, D. D. Poloz. - Moscow : Agropromizdat, 1987. - 319 c. - (Textbook and manuals for students of higher educational institutions. Veterinary science). - 0-95. - Text (visual): direct.
3. Veterinary toxicology : Manual for students of universities on speciality "Veterinary" / Zhulenko Vasily Nikolaevich, Rabinovich Moses Isaakovich, Talanov German Alexandrovich ; Edited by V.N. Zhulenko. - M. : KolosS, 2004. - 384 c. : ill. - (Textbooks and manuals for students of higher educational institutions). - ISBN 5-9532-0016-1 : 213-84. - Text (visual) : direct.
4. Shilov, M. P. Botany: educational and methodical manual / M. P. Shilov, T. N. Shilova. - Ivanovo: Ivanovo State Agricultural Academy named after Acad. D.K.Belyaev, 2017. - 136 c. - Text: electronic // Lan: electronic-library system. - URL: https://e.lanbook.com/book/135275 (accessed: 04/27/2024). - Access mode: for authorised users.
5. Ligun, A. M. Medicinal plants: textbook / A. M. Ligun, S. A. Berseneva. - Ussuriysk: Primorskaya GSA, 2014. - 386 c. - Text: electronic // Lan: electronic-library system. - URL: https://e.lanbook.com/book/70635 (accessed: 04/27/2024). - Access mode: for authorised users.
6. Pharmacognosy: textbook / compilers A. V. Blednova, S. Y. Steblovskaya. - Kursk: Kursk State Agricultural Academy, 2012. - 41 c. - Text: electronic // Lan: electronic-library system. - URL: https://e.lanbook.com/book/134824 (accessed: 04/27/2024). - Access mode: for authorised users.
7. Naumkin V.N., Demidova A.G., Manokhina L.A. et al. Healing properties of wild plants: textbook / V.N. Naumkin, A.G. Demidova, L.A. Manokhina [et al]. - St. Petersburg: Lan, 2019. - 452 c. - ISBN 978-5-8114-3175-5. - Text: electronic //Electronic-library system "Lan".-URL: https://e.lanbook.com/book/113390 (accessed: 04/27/2024). - Access mode: for authorised users of EBS "Lan".
8. Ryadnova, T. A. Veterinary pharmacology. Toxicology: teaching manual / T. A. Ryadnova. - 2nd ed., supplement. - Volgograd: Volgograd GAU, 2015. - 68 c. - Text: electronic // Lan: electronic-library system. - URL: https://e.lanbook.com/book/76624 (accessed: 04/27/2024). - Access mode: for authorised users.

8. THE LIST OF RESOURCES OF THE INFORMATION AND TELECOMMUNICATION NETWORK "INTERNET" NECESSARY FOR EDUCATION OF THE DISCIPLINE

Students can use the following Internet resources to prepare for practical classes and to do independent work:

1. https://ecoportal.info - Ecological portal
2. https://bigenc.ru/biology/text/2138113 -Big Russian Encyclopaedia. Medicinal plants
3. https://factymira.ru/?p=6414 - The most dangerous and poisonous plants of Russia

Electronic library systems:

1. ELS "SPBGUVM"
2. ELS "Lan Publishing House"
3. Legal reference system "ConsultantPlus"
4. University information system "RUSSIA"
5. Full-text database POLPRED.COM
6. Scientific electronic Library ELIBRARY.RU
7. Russian Scientific Network
8. Database of international scientific citation indexes Web of Science
9. Scopus database of International Science Citation Indexes
10. Full-text interdisciplinary database on agricultural and environmental sciences ProQuest AGRICULTURAL AND ENVIRONMENTAL SCIENCE DATABASE
11. Electronic books of the publishing house "Prospekt Nauki" http://prospektnauki.ru/ebooks/
12. Collection "Agriculture. Veterinary medicine" publishing house "Quadro" ELS "Elibris" publishing house "Quadro" https://elibrica.com/

9. METHODOLOGICAL GUIDELINES FOR STUDENTS ON EDUCATION OF THE DISCIPLINE

In the process of mastering the discipline "Medicinal and poisonous plants" student must attend lecture-type classes, during which to take notes; attend seminar-type classes with the mandatory fulfilment of all tasks of the teacher in the workbook for practical classes. Study the sections and fulfil the teacher's assignments provided for independent work.

Recommendations for working on the lecture material

When preparing for the lecture, the student is recommended to:

1) review the notes of the previous lecture and restore in memory the previously learnt material;

2) it is useful to review the material of the future lecture;

3) if an independent study of separate fragments of the topic of the previous lecture is assigned, it should be done without delay;

4) psychologically adjust to the lecture.

For each lecture, practical training and laboratory work, the number, topic, list of issues covered, volume in hours and references to the recommended literature are given.

Recommendations on preparation for practical classes

Practical (seminar) classes are an important part of the professional training of students in the discipline "Medicinal and poisonous plants".

The main purpose of practical (seminar) classes - the formation of students analytical, creative thinking through the acquisition of practical skills. Also practical classes are held to deepen and consolidate the knowledge gained in lectures and in the process of independent work on

normative documents, educational and scientific literature. In preparation for a practical lesson for students should study or repeat the theoretical material on a given topic.

When preparing for the practical training, the student is recommended to adhere to the following algorithm;

1) familiarise yourself with the plan of the upcoming class;

2) study the literature sources that have been recommended.

Practical (seminar) classes fulfil the following tasks:

- stimulate regular study of recommended literature, as well as attentive attitude to the lecture course;
- consolidate the knowledge obtained in the process of lecture training and independent work on literature;
- expand the scope of professionally significant knowledge, skills, abilities;
- allow to check the correctness of previously acquired knowledge;
- instil skills of independent thinking and oral presentation;
- contribute to the free use of terminology;
- provide the teacher with an opportunity to systematically monitor the level of independent work of students.

Recommendations for work with literature

Work with literature is an important stage of independent work of the student to master the subject, contributing not only to the consolidation of knowledge, but also to the expansion of horizons, mental abilities, memory, the ability to think, state and confirm their hypotheses and ideas. In addition, research skills necessary for further professional activity are developed.

Proceeding to the study of literature on the topic, it is necessary to make outlines, extracts, notes. In addition, it is necessary to learn to immediately make a card index of special literature and publications of sources, both proposed by the teacher and identified independently, as well as to refer to bibliographic directories, annals of journal articles, book annals, refereed journals. In this case, publications of sources (articles, book titles, etc.) to write on separate cards, which should be filled out according to the rules of bibliographic description (surname, initials of the author, title of the work. Place of publication, publishing house, year of publication, number of pages, and for journal articles - the name of the journal, year of publication, page numbers). On each card it is advisable to record the author's thought of the book or a fact from this book only on one specific issue.

If the work, even in the same paragraph or phrase, contains other judgements or facts on another issue, they should be written out on a separate card. The statement should be concise, precise, without subjective judgements. On the back of the card you can make your own notes about the book or article, its content, structure, the sources it is based on, etc. You can also write your own notes on the back of the card.

Assessment of knowledge, skills, abilities, skills characterising the stages of competences formation in the discipline "Medicinal and Poisonous Plants" is carried out in the form of current control and interim certification.

Current control is carried out during the semester in order to determine the level of mastering of knowledge, formation of skills and abilities, to improve teaching methods, organisation of educational work and providing individual assistance to students.

The current control includes the check of knowledge, skills and abilities of students:

- in class (questioning)
- by the results of individual assignments;
- on the results of quality control of lecture notes, workbooks and other materials;
- according to the results of the report of students during the individual consultation of the teacher, conducted in the hours of independent work, on existing debts. The procedure of intermediate attestation takes place in accordance with the Regulations on the forms, frequency and order of current progress control and intermediate attestation of students of FSBEI VO SPbSAVM from 28 January 2016.

Intermediate attestation is carried out at the end of the 2nd semester and represents the final assessment of knowledge in the discipline in the form of scoring. Intermediate attestation is carried out in oral form.

10. EDUCATIONAL SOCIAL WORK

Within the framework of the discipline the educational work is carried out to form a modern scientific worldview and a system of basic values, formation and development of spiritual and moral, civic and patriotic values, a system of aesthetic and ethical knowledge and values, attitudes of tolerant consciousness in society, formation of students' need to work as the first necessity of life, the highest value and the main way to achieve success in life, to understand the social significance of their future profession.

11. THE LIST OF INFORMATION TECHNOLOGIES USED IN THE IMPLEMENTATION OF THE EDUCATIONAL PROCESS

11.1 Information technologies for the educational process of the discipline is previewed the use of information technologies:

✓ practical classes using multimedia;
✓ interactive technologies (dialogues, collective discussion on various topics for realization a particular educational and professional task);
✓ interaction with students via e - mail;
✓ community work in the electronic information and educational environment of St. Petersburg State University: https://spbguvm.ru/academy/eios/
✓

11.2. Software
The list of licensed and free- distributed software, including national programs

№ п/п	Technical and computer programs recommended by sections and topics of the program	License
1	MS PowerPoint	67580828
2	LibreOffice	free software
3	OS Alt Education	AAO.0022.00
4	ABIS " MARK-SQL"	02102014155
5	MS Windows 10	67580828
6	System Consult Plus	503/KJI
7	Android OS	free software

12. THE MATERIAL AND TECHNICAL BASE NECESSARY FOR THE IMPLEMENTATION OF THE DISCIPLINE EDUCATIONAL PROCESS

The title of the discipline (module), practice in accordance with the curriculum	The title of special rooms and rooms for self-work	Equipment of special rooms and rooms for self-work
Medicinal and poisonous plants	359 (5 Chernigovskaya St., St. Petersburg, 196084) Classroom for seminars, group and individual consultations, current control and interim certification	*Specialised furniture:* desks, chairs, blackboard, chalk, cloth. *Visual aids and teaching materials:* herbariums. *Technical teaching aids*: multimedia projector, screen, laptop.
	340 (5 Chernigovskaya St., St. Petersburg, 196084) Classroom for seminars, group and individual consultations, current control and interim certification	*Specialised furniture:* desks, chairs, stools, blackboard, chalk, cloth. *Technical means of education:* multimedia projector, screen, laptop.
	342 (5 Chernigovskaya St., St. Petersburg, 196084) Classroom for seminars, group and individual consultations, current control and interim certification	*Specialised furniture:* desks, chairs, stools, blackboard, chalk, cloth. *Technical means of education:* multimedia projector, screen, laptop.

Developer:

Associate Professor of the Department Feeding and Breeding of Animals,
Candidate of Agricultural Sciences N.D. Vinogradova

Annex 1

Ministry of Agriculture of the Russian Federation
Federal State Budgetary Educational Institution
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«Saint Petersburg State University of Veterinary Medicine»

Department of feeding and breeding of animals

FUND OF ASSESMENT TOOLS
for the discipline
«MEDICINAL AND POISONOUS PLANTS»"

Level of higher education
SPECIALIST COURSE

Specialty 05.36.01 Veterinary medicine
Full-time education

Education starts in 2024

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2024

1. PASSPORT OF THE FUND OF ASSESMENT TOOLS

№	Acquired competence	Assessed modules of a discipline	Assesment tool
1	**PC-9**. Development of recommendations for special feeding of sick animals for therapeutic purposes. **PC-9 ID-1** - To know the types of dietary regimes, the principles of feed choice, using digital technologies, norms, feeding regimes in animal diet therapy.	Section 1. History of the use of plants for medicinal purposes from antiquity to the present. Prospects for the use of plants for medicinal purposes.	Test, oral questioning
2		Section 2. Morphology of leaf, shoot, flower, inflorescence, fruit, root	Test, oral questioning
3		Section 3. Chemical composition of medicinal plants. Characterization of biologically active substances contained in medicinal and poisonous plants.	Test, oral questioning
4		Section 4. Rules for harvesting medicinal plant raw materials.	Test, oral questioning
5		Section 5. Medicinal forms of plant raw materials. Rules of their preparation.	Test, oral questioning
6		Section 6. Medicinal plants of different natural zones and their use in veterinary practice	Test, report in the form of a presentation
7		Section 7. Feed plants with medicinal properties	Test, report in the form of a presentation
8		Section 8. Poisonous and harmful plants of meadows and pastures.	Test, report in the form of a presentation

1. LIST OF ASSESSMENT TOOLS

№	Name of the assessment tool	Brief description of the assesment tool	Presentation of the assessment tool in the fund
1.	Oral questioning	A means of controlling the assimilation of educational material of the topic, section or sections of the discipline, organized as a training session in the form of an interview between the teacher and students	Questions on topics/sections of the discipline
2.	Test	A system of standardized tasks, which allows to automate the assessment of students' knowledge and skills	A fund of test assignments
3.	Report in the form of a presentation	A means of control, organized as a report on topics related to the discipline under study, and designed to find out the amount of knowledge of the student on a particular section, topic, problem, etc. as a control of self-development based on the principles of self-education	Topics of reports to the discipline sections

2. INDICATORS AND CRITERIA FOR ASSESSING COMPETENCIES AT VARIOUS STAGES OF ITS FORMATION, DESCRIPTION OF ASSESSMENT SCALES

Planned results of competency acquaired	The level of development				Assesment tool
	Unsatisfactory	Satisfactory	Good	Exellent	
PC-9. Development of recommendations for special feeding of sick animals for therapeutic purposes.					
PC-9 ID-1 - To know the types of dietary regimes, the principles of feed choice, using digital technologies, norms, feeding regimes in animal diet therapy.	The level of knowledge below the minimum requirements, there were gross mistakes	The minimum acceptable level of knowledge, many minor errors	The level of knowledge in extent, consistent with training program training program, admitted a few minor mistakes	The level of knowledge in extent, consistent with training program level of knowledge in the scope of the training program, without errors.	Oral questioning, tests, reports in the form of presentations

3. A LIST OF CONTROL TASKS AND OTHER MATERIALS, NECESSARY FOR THE ASSESSMENT OF KNOWLEDGE, SKILLS AND WORK EXPERIENCE

3.1 Typical tasks for the current control of academic progress

3.2 Questions for oral questioning

Questions to assess the competence:

PC-9. Development of recommendations for special feeding of sick animals for therapeutic purposes.

PC-9 ID-1 - To know the types of dietary regimes, the principles of feed choice, using digital technologies, norms, feeding regimes in animal diet therapy.

For Section 1:

1. Importance of medicinal plants in veterinary medicine
2 History of the study and use of medicinal plants
3. Works of Avicenna, Paracelsus, Dioscarides, Pliny, Galen, Hippocrates.
4. Development of medicine in the Middle Ages. Works of Ibn-Sina
5. Folk medicine in Russia. The first Russian pharmacies
6. Activities of I.G. Gmelin, S.P. Krasheninnikov, A.M. Karmyshev, I.I. Lepekhin, P.S. Pallas, N.P. Sokolov
7. The main achievements in the study of the chemical composition of medicinal plants in the late 18th - early 19th century.
8. The work of E.A. Shatsky, N.N. Zimin, A.M. Butlerov, N.I. Lunin, S.P. Botkin

For Section 2:

1. Leaf morphology
2. Morphology of shoot
3. Flower morphology
4. Morphology of inflorescence
5. Morphology of fruit
6. Root morphology

For Section 3:

1. Main groups of chemical substances of medicinal plants. Their biological role
2. Glycosides, their chemical nature, application
3. Alkaloids: chemical nature, therapeutic effect
4. Vitamins: chemical nature, therapeutic effect
5. Tannins: chemical nature, therapeutic effect
6. Flavonoids: chemical nature, therapeutic effect
7. Coumarins: chemical nature, therapeutic effect
8. Essential oils: chemical nature, therapeutic effect
9. Fatty oils: chemical nature, therapeutic effect
10. Phytoncides: chemical nature, therapeutic effect
11. Gum: chemical nature, therapeutic effect
12. Slimes: chemical nature, therapeutic effect
13. Resins: chemical nature, therapeutic effect
14. Starch: chemical nature, therapeutic effect
15. Fiber: chemical nature, therapeutic effect

For Section 4:

1. Organization of medicinal plant harvesting
2. Peculiarities of collection of buds and leaves
3. Peculiarities of collection of bark
4. Features of collection of flowers and herbs
5. Features of the collection of fruits and berries
6. Features of collection of underground organs
7. Drying of medicinal raw materials of different types.
8. Bringing raw materials to a standardized state
9. Packaging of medicinal raw materials
10. Storage of medicinal raw materials

For Section 5:

1. Preparation of galenic and novogalenic preparations
2. Preparation of collection, powder
3. Preparation of gruel
4. Pill, bolus, tablet
5. Mixtura, decoction, infusion, tincture. Features of preparation
6. Preparation of emulsions

3.1.2. Topics of reports in the form of presentations

Topics of reports for competence assessment:

PC-9. Development of recommendations for special feeding of sick animals for therapeutic purposes.

PC-9 ID-1 - To know the types of dietary regimes, the principles of feed choice, using digital technologies, norms, feeding regimes in animal diet therapy.

Under Section 6:

1. Medicinal plants used for cardiovascular diseases
2. medicinal plants for expectorants and emollients
3. medicinal plants that improve digestion
4. Medicinal plants astringent, antidiarrheal
5. Medicinal plants laxative
6. Medicinal plants bitter, appetite stimulants
7. Medicinal plants antispasmodic and reducing secretory function of glands
8. Diuretic medicinal plants
9. Diuretic medicinal plants
10. Diaphoretic and antipyretic medicinal plants
11. Anthelmintic medicinal plants
12. medicinal plants that heal blood and uterine fluids
13. Vitamin medicinal plants
14. Medicinal plants used for eczema and other skin diseases

Under Section 7:

1. Feed plants with medicinal properties

Under Section 8:

1.Poisonous plants of feeding lands.

3.1.3. Tests

Competency assessment tests:

PC-9. Development of recommendations for special feeding of sick animals for therapeutic purposes.

PC-9 $_{ID-1}$ - To know the types of dietary regimes, the principles of feed choice, using digital technologies, norms, feeding regimes in animal diet therapy.

1. How is ayre used in folk Indian medicine?
a) a bactericidal agent that kills tubercle bacilli
b) an effective remedy for throat ulcers and gastroenteritis
c) a tonic and aromatic stomachic agent

2. Which plant is used to rinse the hair to give it a golden color?
a) Millefolium
b) Chamomile
c) Tussilágo

3. What was the name of the people who had knowledge of medicinal plants?
a) doctor
b) herbalist
c) healer

4. Which parts of plants can have medicinal properties
a) only leaves
b) only fruits
c) all parts

5. The main problem with medicinal plants?
a) human influence
b) changes in soil composition
c) the influence of solar radiation

6. Which rule may not be followed when using medicinal plants?
a) place of collection of raw materials
b) the timing of collection of raw materials
c) peculiarities of use

7. Which medicinal plant helps to stop bleeding in a small wound?
a) Plantágo
b) raspberry leaves
c) Chamomile

8. Why are some plants poisonous?
a) increased solar radiation
b) a way to protect them from being eaten by animals
c) contaminated soil

9. The fruits of medicinal plants are harvested?
a) during the period of full ripening
b) during flowering
c) in the fall

10. The leaves of Tussilágo are used for
a) colds
b) digestive disorders
c) nervous diseases

11. Under Peter the Great, the following were created
a) apothecary huts
b) apothecary boxes
c) apothecary gardens
12. What plant, according to folk medicine, should be used to heal wounds?
a) cranberries
b) aloe
c) chamomile
13. Medicinal plants should not be collected
a) near rivers
b) near forests
c) near roads
14. Medicinal plants may be used
a) only when prescribed by a doctor
b) according to ancient recipes
c) on the advice of friends and acquaintances
15. Drying medicinal herbs in bad weather should be done a) in the shade
a) in the shade
b) on the stove
c) in the sun
16. Which plant is not medicinal
a) Agrostémma githágo
b) Crataégus sanguínea
c) Agrimónia eupatória
17. Roots of medicinal plants when collecting them
a) are pulled out of the ground
b) do not use
c) dig up
18. An apothecary's hut was opened in Russia
a) under Peter I
b) under Nicholas I
c) under Ivan the Terrible
19. When collecting medicinal herbs, they should be
a) cut with scissors
b) cut with a knife
c) dig them out of the ground
20. The above-ground part of motherwort is used as
a) bactericidal
b) diuretic
c) sedative
21. Medicinal herbs are collected
a) during or immediately after rainfall
b) before sunrise or after sunset
c) in sunny, dry weather
22. Name a medicinal plant from the family of sponges
a) Radiola rosea
b) Melissae officinalis herba
c) Digitális grandiflóra
23.Decoction and infusion of berries of which plant is used as a disinfectant?
a) Oxycóccus
b) Vibúrnum ópulus

c) Vaccínium vítis-idaéa

24. To which family belongs ginseng common ginseng

a) Araliáceae
b) Scrophulariaceae
c) Umbellíferae

25. What did the word "herbalist" mean in ancient Russia?

a) a person treating with herbs
b) a person treating with herbs
c) a book describing herbs

26. Name the form of a drug prepared on the basis of alcohol

a) infusion
b) tincture
c) decoction

27. What kind of plant is Ononis arvensis?

a) Ononis arvensis
b) Glycyrrhiza uralensis
c) Filipéndula ulmária

28. What is the Latin name of the common fiddlehead?

a) Tanacetum vulgare
b) Acorus calamus
c) Tussilago farfara

29. Another name for Rhapónticum carthamoídes is

a) marmoset root
b) golden root
c) maral root

30. Name the inflorescence of St. John's wort

a) solitary flower
b) shield
c) brush

31. What biologically active substances do bluebells contain the most?

a) saponins
b) tannins
c) essential oils

32. In what phase of development does the plant accumulate the most alkaloids?

a) maturation
b) budding
c) flowering

33. Which of the following plants has an anti-inflammatory effect?

a) Inula helenium
b) Ácorus cálamus
c) Chamomile

34. Which plant extract is used to prepare over-the-counter herbal antidepressants?

a) licorice
b) sage
c) St. John's wort

35. Which plant has strongly bactericidal properties against many pathogens, especially staphylococci and streptococci?

a) Callisia
b) Calendula
c) Hyperici perforati

36. Which plant is a traditional cough remedy?

a) chamomile
b) rosehip
c) Tussilágo

37. Which plant is used in the treatment of respiratory diseases?

a) licorice
b) Hippóphaë rhamnóides
c) St. John's wort

38. The fruit of which plant is a valuable multivitamin?

a) Hippóphaë rhamnóides
b) raspberry
c) rosehip

39. What kind of forage plant is Trifolium protense?

a) meadow clover
b) sown alfalfa
c) hedgehog

40. What is the forage plant Zea mays?

a) corn
b) barley
c) sorghum

3.2. Standard tasks for intermediate certification
3.2.1. Questions for the test

The competence achieved:
PC-9. Development of recommendations for special feeding of sick animals for therapeutic purposes.
PC-9 ID-1 - To know the types of dietary regimes, the principles of feed choice, using digital technologies, norms, feeding regimes in animal diet therapy.

1. Practical value of plants in human and animal life. Role of medicinal plants
2 History of the use of medicinal plants
3. History of the use of medicinal plants in Russia.
4. Importance of plant remedies in folk and scientific medicine
5. Medicinal plants of different natural zones
6. Botanical-geographical and resource characteristics of the European part of Russia
7. Botanical-geographical and resource characteristics of Siberia
8. Botanical-geographical and resource characteristics of the Far East 8.
9. Works of Avicenna, Paracelsus, Dioscarides, Pliny, Galen, Hippocrates
10. Development of medicine in the Middle Ages. Works of Ibn-Sina
11. folk medicine in Russia. The first Russian pharmacies
12. Activities of I.G. Gmelin, S.P. Krasheninnikov, A.M. Karmyshev, I.I. Lepekhin, P.S. Pallas, N.P. Sokolov.
13. The main achievements in the study of the chemical composition of medicinal plants at the end of the 18th - beginning of the 19th century.
14. The work of E.A. Shatsky, N.N. Zimin, A.M. Butlerov, N.I. Lunin, S.P. Botkin.
15. Development of the science of medicinal plants in the Soviet period
16. The current state of the science of medicinal raw materials and drugs

17. The main groups of chemical substances of medicinal plants. Their biological role
18. Glycosides, their chemical nature, use
19. alkaloids: chemical nature, therapeutic effect
20. Vitamins: chemical nature, therapeutic effect
21. Tannins: chemical nature, therapeutic effect
22. Flavonoids: chemical nature, therapeutic effect
23. Coumarins: chemical nature, therapeutic effect
24. essential oils: chemical nature, therapeutic effect
25. Fatty oils: chemical nature, therapeutic effect
26. Phytoncides: chemical nature, therapeutic effect
27. Gum: chemical nature, therapeutic effect
28. Slimes: chemical nature, therapeutic effect
29. Resins: chemical nature, therapeutic effect
30. Starch: chemical nature, therapeutic effect
31. Fiber: chemical nature, therapeutic effect
32. microelements, their content in plants, therapeutic effect
33. Rules of collection, drying and storage of medicinal plants
34. Classification of medicinal preparations from plant raw materials
35. Preparation of the simplest medicinal preparations
36. Classification of medicinal plants by pharmacological activity.
37. Pharmacologically active compounds, related substances, ballast substances.
38. How are plants classified according to their action on various organs and systems?
39. Medicinal plants used in cardiovascular diseases
40. Medicinal plants expectorants and emollients
41. Medicinal plants that improve digestion
42. Medicinal plants astringent, antidiarrheals
43. Medicinal plants laxative
44. Medicinal plants bitter, appetite stimulating.
45. Medicinal plants antispasmodic and reduce the secretory function of glands
46. Diuretic medicinal plants
47. Diuretic medicinal plants
48. Diaphoretic and antipyretic medicinal plants
49. Anthelmintic medicinal plants
50. Blood-stopper and uterine medicinal plants
51. Vitamin medicinal plants
52. Medicinal plants used for eczema and other skin diseases
53. Poisonous plants used in veterinary medicine.
54. What factors contribute to the accumulation of poisonous beginning in plants?
55. List plants that excite the central nervous system.
56. List plants that calm the central nervous system.
57. Name the order of first aid for poisoning by poisonous plants.
58. Characteristics of plants of the buttercup family.
59. Characteristics of plants of the umbrella family.
60. Rare plants used in medicine. Introduction of medicinal plants.
61. Rational processing of medicinal raw materials. Protection of medicinal plants.

62. Poisonous plants that cause CNS excitation
63. Plants that cause excitation of the CNS and simultaneously acting on the heart, digestive tract, kidneys
64. Plants that cause CNS depression and paralysis.
65. Plants causing CNS depression and paralysis and simultaneously acting on the digestive tract, heart
66. Plants that cause damage to the heart
67. Plants that increase the sensitivity of animals to the action of sunlight
68. Plants that cause liver damage
69. Plants that cause disorders of salt metabolism
70. Influence of forage harvesting conditions on toxicity of poisonous plants
71. Harmful plants of natural fodder lands
72. Plants causing mechanical damage to animals
73. Plants causing blockage of the gastrointestinal tract
74. Plants causing spoilage of milk and meat, clogging animal hair, causing spoilage of honey and death of bees
75. Feed plants with medicinal properties
76. Control measures against poisonous and harmful plants

4. METHODOLOGICAL MATERIALS DEFINING THE PROCEDURES FOR ASSESSING KNOWLEDGE, SKILLS AND ABILITIES AND WORK EXPERIENCE CHARACTERIZING THE STAGES OF COMPETENCE FORMATION

4.1. Criteria for assessing the knowledge of students during the oral survey:

Mark "**excellent**" - the student clearly expresses his point of view on the issues under consideration, giving appropriate examples.

Mark "**good**" - the student admits some errors in the answer

The mark «**satisfactory**" - the student discovers gaps in knowledge of the basic educational and normative material.

The mark "**unsatisfactory**" - the student discovers significant gaps in knowledge of the basic provisions of the discipline, the inability to obtain the correct solution to a specific practical problem with the help of a teacher.

4.2. Criteria for evaluating students' knowledge during testing

The test result is evaluated on a percentage rating scale. Each student is offered a set of test tasks consisting of 38 questions:

- The mark «**excellent**» - 90% or more correct answers.
- The mark «**good**» - 80% or more of correct answers.
- The mark «**satisfactory**» - 70% or more of correct answers.
- The mark «**unsatisfactory**» - less than 70% of correct answers

4.3. Criteria for evaluating students' knowledge in the preparation of reports

The mark «**excellent**» is given if all the requirements for the disclosure of questions are met: the problem is identified and its relevance is justified, a brief analysis of different points of view on

the problem under consideration is made and logically stated own position, conclusions are formulated, the topic is fully disclosed, correct answers to additional questions are given.
The mark «**good**» is given if all the requirements for the disclosure of issues are met, but there are inaccuracies. In particular, there are inaccuracies in the conceptual apparatus in the presentation of the material; there is no logical consistency in judgments; additional questions are not fully answered.
The mark «**satisfactory**» - there are significant deviations from the requirements for the study of the discipline course. In particular: the questions are disclosed only partially; factual errors in the content when answering additional questions.
The mark «**unsatisfactory**» - the questions on the discipline are not disclosed, there is a significant lack of understanding of the theoretical foundations of the discipline.

4.4. Criteria of knowledge during the test

The mark "**accepted** " must correspond to the parameters of any of the positive ratings ("excellent", "good", "satisfactory").

The mark "**not accepted** " rating should correspond to the parameters of the "unsatisfactory" rating.

The mark "**excellent**" - all types of academic work provided by the curriculum. The student demonstrates the compliance of knowledge, skills, abilities, skills given in the tables of indicators, operates the acquired knowledge, skills, abilities, skills, applies them in situations of increased complexity. At the same time, there may be inaccuracies, difficulties in analytical operations, transfer of knowledge and skills to new, non-standard situations.
The mark "**good**" - all types of academic work provided by the curriculum. The student demonstrates the compliance of knowledge, skills, abilities, skills given in the tables of indicators, operates the acquired knowledge, skills, abilities, skills, applies them in standard situations. There may be minor errors, inaccuracies, difficulties in analytical operations, transfer of knowledge and skills to new, non-standard situations.
The mark «**satisfactory**» - not performed one or more types of academic work provided by the curriculum. The student demonstrates incomplete compliance of knowledge, skills, skills given in the tables of indicators, significant errors are made, there is a partial lack of knowledge, skills, skills for a number of indicators, the student has significant difficulties in operating knowledge and skills in their transfer to new situations.
The mark «**unsatisfactory**» - not fulfilled types of academic work provided by the curriculum. demonstrates incomplete compliance of knowledge, skills, skills given in the tables of indicators, significant errors are made, shows the lack of knowledge, skills, skills for a large number of indicators, the student has significant difficulty in operating knowledge and skills in their transfer to new situations.

5. ACCESSIBILITY AND QUALITY OF EDUCATION FOR DISABLED PEOPLE

If necessary, persons with disabilities and persons with disabilities are given additional, time to prepare an answer for the test.

When conducting the procedure for evaluating the learning outcomes of disabled people and persons with disabilities, their own technical means can be used.

The procedure for evaluating the learning outcomes of disabled people and persons with disabilities in the discipline provides for the provision of information in forms adapted to the limitations of their health and perception of information:

For people with visual impairments:	– in printed form in enlarged font; – in the form of an electronic document.
For people with hearing impairments:	– in printed form; – in the form of an electronic document.
For people with disorders of the musculoskeletal system:	– in printed form, the device; – in the form of an electronic document.

When conducting the procedure for evaluating the learning outcomes of disabled people and persons with disabilities in the discipline, it ensures that the following additional requirements are met, depending on the individual characteristics of the students:

a) instructions on the procedure for conducting the assessment procedure are provided in an accessible form (orally, in writing);

b) an accessible form of assignment of assessment tools (in printed form, in printed form in enlarged font, in the form of an electronic document, assignments are read out by the teacher);

c) an accessible form of providing answers to tasks (written on paper, a set of answers on a computer, orally).

If necessary, for students with disabilities and the disabled, the procedure for evaluating the results of training in the discipline can be carried out in several stages.

The procedure for evaluating the learning outcomes of disabled people and persons with disabilities is allowed using distant learning technologies.