Odessa National Medical University

Department of General and Clinical Pharmacology and Pharmacognosy

GUIDELINES
for independent work of students (IWS)

Discipline: "Resursovedenie"

Study subject CDS "Accounting for medicinal plant resources, the principles of their management and protection.
The choice of method definition urazhaynosti medicinal plants of different life forms. Introduction energosberigayuschih technology LSR processing and manufacturing of pharmaceuticals. Peculiarities of diagnosis and the possibility of using blizkosrodnenyh types LR. Protected areas of different continents and their role in the preservation and augmentation of resources. LR in the Red Book of different (1996 is the 2009) years of the publication "

Course 5 Faculty medico-pharmaceutical

approved by
in the methodical meeting of the
Department
August 28, 2025
Protocol № 1
Head. Department of

_____ prof.Rozhkovsky YV

Odessa 2025

Topic number 4, "Accounting for medicinal plant resources, the principles of their management and protection.
The choice of method definition urazhaynosti medicinal plants of different life forms. Introduction energosberigayuschih technology LSR processing and manufacturing of pharmaceuticals. Peculiarities of diagnosis and the possibility of using blizkosrodnenyh types LR. Protected areas of different continents and their role in the preservation and augmentation of resources. LR in the Red Book of different (1996 is the 2009) s edition of '"10

1. Background. The main objectives of the study is to define the resource inventory density native RL and reserves calculations and possible volume preform RL. The general procedure of accounting HR resources are designed for a long time (1966), and the last time it has undergone significant changes. Special attention being given to the rational use of resources, which is why proposed to calculate the value of the operational reserve of raw materials under the new formula. In recent years Ukraine has become a very significant reduction in the carrying out of the field directly resursovedcheskih works spending, but keep in mind that the correct choice of method and compliance with recommendations on accounting depends on the correctness of the expected results, so the treatment of students of this technique at specific sites is very important.

2. Purpose of the activity:

- elect the method of determining resources RL and a method for determining yields;
- possess method of statistical material processing determine the field RL and yields of raw materials inventory calculations;
- to formulate recommendations for the rational exploitation of natural resources, the main raw LR.

3. Interdisciplinary integration:

number pp	**discipline**	**Know**	**be able to**
one.	**previous** Medical botany	Phase of development, the environmental conditions of growth of medicinal plants;	To assess the current conditions of growth of specific types of LR
2.	pharmacognosy	The effect of various factors on the contents of the main storage and a bar RL	Choosing optimum blank areas and periods native RL
3.	Intra integration (the topic of this discipline,	Resursovedenie as science and academic	develop: on the harvesting

	which integrates that which is studied) ...	discipline. The raw material base of medicinal plants in Ukraine. The use of herbal medicines in the Republic of Lithuania and the modern world medical practice. Accounting for medicinal plant resources, the principles of their management and protection. Cultivation of Latvia in Ukraine and the world.	instructions, drying and storage of raw wild higher plants, algae, lichens and fungi, newsletters; make reports for doctors and advise the public on matters related to the harvesting and use of raw materials and products of natural origin.

4.Zadaniya for independent work during preparation for classes

4.1. The list of key terms, parameters, characteristics which students must learn in preparation for the class:

The term (concept)	Definition (content)
one	2
Rational use of resources	
pesticides	
Laws of Ukraine, which are relevant to the Environment	
The object of natural reserve fund	
reserve	
wildlife sanctuary	
uppercase The Site	
National natural (landscape) park	
Security at international, national levels	
Security at the regional level	
The Red Book of Ukraine	
Evropeysky IUCN Red List	

Approaches to the protection of the Republic of Lithuania	

theoretical questions

1. The main objectives of the study of natural resources of medicinal plant raw materials.
2. Methods for determining the RL resource
3. What is the sampling method for the determination of resources?
4. The main objectives of the expedition stage resursovedcheskih research
5. How to determine the area of a large array of natural vegetation? Area specific thicket?
6. Define the concepts: productivity (stock density), the stock of raw materials.
7. What kind of data are processed in the office period resursovedcheskih research?
8. The concept of biological and operational stocks of raw materials.

4.3. Practical work (tasks) to be performed in class:

Zavdannya 1. With the help of the recommended literature, to finalize the list of most important distribution in Ukraine HR types (Table 5, activity №2): select them and combine woo resource group table. 25.

table 25

Resource group's most important medicinal plants

Hardly vulnerable	Not only vulnerable	vulnerable	very vulnerable	Disappearing (the resources are not available)

Zavdannya 2. To characterize the endangered and missing resources in Ukraine (list 5 in Table 25) and find out their forms and means of protection - to fill in the table. 26

Table 26.
Medicinal plants of Ukraine with endangered and lack of resources

species name Ukrain (rus.).; Lat.	Distribution in Ukraine and places proizrasteniya	Factors negative impact on the state of resources	Means of protection of resources reproduction	
			species	tsenokompleksov

Zavdannya 3 (home.) Determine among the "endangered species" Ukrainian flora species of medicinal plants and compare their range and status in the Red Book 1996 edition is the 2009's. To conclude:

_____

_____

_____
_____
_____
_____

5. Content of the topic:

Theoretical material № described in Chapter 4 and in the literature references:

1. Heinrich M., Barnes J., Prieto-Garcia J., Gibbons S., Williamson E. M. Fundamentals of Pharmacognosy and Phytotherapy. 3rd ed. Elsevier, 2023. 282 p.
2. Medicinal Plant Resources : textbook / V. M. Minarchenko et al. Kyiv : Palyvoda A. V., 2019. 128 p.
3. Bioprospecting of Ethnomedicinal Plant Resources: Sustainable Utilization and Restoration / ed. by G. Shukla et al. CRC Press, 2024. 466 p.
4. Medicinal Plants: Bioprospecting and Pharmacognosy / ed. by A. B. Sharangi, K. V. Peter. Apple Academic Press, 2022. 602 p.
5. Van Wyk B. E., Wink M. Medicinal Plants of the World. 2nd ed. CABI, 2017.

6.Rekomendovanaya literature:

6. Basic literature

7. Фармакогностичне ресурсознавство з основами інтродукції лікарських рослин / Навчальний посібник. – Полтава: ПДМУ, 2021.
8. Державна Фармакопея України : в 3 т. / ДП «Український науковий фармакопейний центр якості лікарських засобів». 2-е вид. Харків : Науковий фармакопейний центр, 2015. Т. 1. 1128 с.
9. Ресурсознавство лікарських рослин: Практикум / Тржецинський С. Д. та ін. – Запоріжжя: ЗДМУ, 2021.
10. Фармакогнозія: підручник для студентів фармацевтичних факультетів / Посилкіна О. В. та ін. – Харків: НФаУ, 2015–2018 (розділи, присвячені сировинній базі).
11. Тржецинський С. Д., Доля В. С., Денисенко О. М. Ресурсознавство лікарських рослин : навч.-метод. посіб. Запоріжжя : ЗДМУ, 2015. 115 с.
12. Грицик А. Р., Водославський В. М., Мельник М. В. Фармакогнозія. Ресурсознавство лікарських рослин : навч. посіб. Івано-Франківськ : ПП Голіней О. М., 2019. 248 с.
13. Зузук Б. М. Ресурсознавство лікарських рослин : навч. посіб. для студ. вищ. фармац. навч. закл. Вінниця : Нова Книга, 2015. 232 с.
14. Heinrich M., Barnes J., Prieto-Garcia J., Gibbons S., Williamson E. M. Fundamentals of Pharmacognosy and Phytotherapy. 3rd ed. Elsevier, 2023. 282 p.

15. Medicinal Plant Resources : textbook / V. M. Minarchenko et al. Kyiv : Palyvoda A. V., 2019. 128 p.
16. Bioprospecting of Ethnomedicinal Plant Resources: Sustainable Utilization and Restoration / ed. by G. Shukla et al. CRC Press, 2024. 466 p.
17. Medicinal Plants: Bioprospecting and Pharmacognosy / ed. by A. B. Sharangi, K. V. Peter. Apple Academic Press, 2022. 602 p.
18. Van Wyk B. E., Wink M. Medicinal Plants of the World. 2nd ed. CABI, 2017.

Additional literature:

19. Лікарські рослини: Рекомендаційний список літератури (актуальні видання 2024 року) / Уманський НУС.
20. Малопоширені ароматичні види лікарських рослин / Наукове видання. – Берегове: ЗУІ ім. Ф. Ракоці ІІ, 2025.
21. Лабораторний журнал з ресурсознавства лікарських рослин : [посібник] / В. М. Мінарченко та ін. Київ : Паливода А. В., 2018. 94 с.
22. Фармакогнозія : підручник для студ. вищ. навч. закл. / В. С. Кисличенко та ін. ; за ред. В. С. Кисличенко. Харків : НФаУ : Золоті сторінки, 2015. 736 с.
23. Державна Фармакопея України : в 3 т. / ДП «Український науковий фармакопейний центр якості лікарських засобів». 2-е вид. Харків : Науковий фармакопейний центр, 2015. Т. 1. 1128 с.
520 p.

electronic resources

24. Medicinal Plant Names Services (MPNS) Resource. Kew Royal Botanic Gardens. URL: kew.org (дата звернення: 22.03.2026).
25. Ресурсознавство лікарських рослин : презентація лекції. Нац. фармац. ун-т. URL: https://cnc.nuph.edu.ua/wp-content/uploads/2023/09/prezentatsiia_resursoznavstvo-lr.pdf (дата звернення: 22.03.2026).

7. Materials for self-control.

7.1. Questions for self-control.

1. What are some ways you can define the specific area of thickets LR?
2. What is the density of the stock LSR?
3. What methods of determining the density of the stock of wild medicinal plant raw materials?
4. Characterize versatile method for determining the stock density.
5. How can we determine the productivity of trees and shrubs?
6. How can I improve the accuracy of determining the yield, if it turned out to be insufficient?
7. What are the criteria chosen model instances.
8. Which plants is possible to determine raw stock density estimated coverage?
9. By what formula expect operating margin LR raw materials?

10. How is the rate of shrinkage of raw materials?

11. What is the rate (period) LR recovery?

12. As in the experiment to determine the rate of recovery coenopopulations LR?

13. What documents must be submitted to the customer at the end of resursovedcheskih work?

14. Explain the content requirements for the rational exploitation of the natural resources of the Republic of Lithuania.

15. Give examples introduction saving technologies in the pharmaceutical industry.

7.2. Tests for self-control.

1. Yields native raw grassy LR determined at

A. Trial count units of 1 m2

B. Trial area of 100 m2

B. transects

G. trial account sections 100 m2

D. The entire area is overgrown

2. A universal method for determining the yield RL is the method of

A. In the eyes

B. projective cover

V. with copies

G. from branches

D. trial count units by collecting and weighing the raw commodity

3. The usual method of determining the productivity of wild RL trees and shrubs

A. According to the degree of closeness CZK

BS copies (branches)

B. In the eyes

G. On test areas of 1 m2

D. On projective cover

4. The density of the stock, which can be studied by LR proektivnymu coating:

A. Lipa

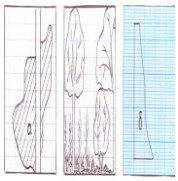
B. Yarrow

The Rosehip

G. Lingonberry

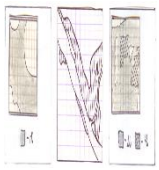
Violet D. Field

5. In the scheme depicted arbitrarily overgrown lily of the valley (a) in one of the forestry. Select the optimum direction of travel route and its width to determine the density of the stock LSR of this plant.



6. Determine the projective cover periwinkle (k) within a square grid using a reduced schematic view.

A: 66-67%



7. Determination of periodicity preform RL is performed on the basis of data on

A. operational stocks of raw LR
B. Productivity RL
B. Ecological tsenotichnu HR affiliation
G. The prevalence of HR in the region
D. Recovery speed after coenopopulations drawn preform RL

8. The period of recovery thickets of Latvia, in which the RL are rhizomes, can be set according to age, which corresponds to most commodity plants, namely

A. Altitude above-ground shoots
B. The annual "rings" on the rhizome
V. The amounts of flowering shoots
The number of plants that bear fruit
D. The amounts of flowering plants

9. In what volume (t / year) are possible annual preform rosehips, if its industrial raw stock in the region of 500 m

A. 500
B. 250
B. 100
G. 50
D. 25

10. How often have to recommend harvesting grass lily of the valley in the Odessa region, if the period of recovery tcenopopuljatcij this species is 3-4 years?

A. Every year,
B. After 1 year
B. Every 3 years
G. Every 4 years
D. Every 5 years

11. For the manufacture of many sedating drugs used as cultivated or wild-growing raw valerian. Density wild stocks of raw materials is determined valerian

A geodetic methods

B. Method of model instances

B. Method of accounting dilnok

G. On projective cover

D. On Eye

12. Grass succession, which in the packaged form implement population grown in plantations and harvested in nature. When determining raw material reserves of this type of method is used

A. with copies

B. projective cover

B. Count Units

G. On Eye

D. Any of the above

13. motherwort herb native part of the domestic plant-hypotensive drugs sedative action. The preform of this raw material should be conducted

A. 1 time in 10 years

B. 1 time in 5 years, in response to a reference base of the CRIC-2

B.1 time in 3 years

G. 1 every 2 years (!) - the right answer

D. Every year

Explanation: view perennial, has no clear eco-coenotic confinement well able to form seeds and rhizomes multiplies.

14. Pharmacist points: the name of raw materials, mass, area of the workpiece, the workpiece date. This process is called:

A. LSR Billet

B. LSR Sort

B. Standardization of herbal drugs

G. Labeling RL

D. Packaging RL

15. Choose the best method of determining the density of raw material stocks -kornevisch Potentilla:

A. In the eyes

B. At the trial count units

B. By proektivnymu coating

G. The method of model instances

D. According to satellite imagery

16. Preparations adonis - cardiac popular herbal remedies. Determination of raw material stocks was carried out by Spring Adonis

A count units - the benchmark in response to the base of the CRIC-2

B. with copies

B. projective cover

G. geodesic

D. On Eye

An explanation that view is now harvested in nature and the study of its performance holds our department, using the combined method of model instances: projective cover.

17. It is necessary to determine the amounts of raw blanks coil (Polygonum snake). It should take into account the recommended rational frequency blanks of this type:

A. Every year,

B. 1 time in 2 years

B. 1 time in 5 years

G. 1 time in 7 years

D. 1 time in 20 years

18. Stocks raw underground organs wild LR determined by:

A count units

B projective cover

The model copies

D on the eye

A geodesic

19. In order to determine the stocks of wild LR two values need to know - the area of thickets and its yield. Yields herb thyme is determined by:

A method geodetic

B method of accounting areas

The eye

D modeling method copies

A method of coating a projective

9. Individual assignments for students on the topic

Handle (in the form of a written report or presentation) the following sources (electronic resource) on the locations of international (interstate) protected areas of Europe and the protection of properties per e (medicinal plants).

Methodical recommendations were made by ***associate professor Boyko IA***