

Class 6

Analysis of medicinal plant raw materials containing coumarins.

PURPOSE OF THE STUDY:

1. To learn to recognise medicinal plants containing coumarins by external signs and distinguish them from impurities.
2. To be able to establish the authenticity and benignity of medicinal plant materials containing coumarins.
3. To improve skills of microscopic analysis of fruits.

QUESTIONS:

1. Coumarins. Concept. Classification.
2. Distribution, localisation and biogenesis of coumarins.
3. Importance of coumarins in plant life and in medicine.
4. Medicinal plants and raw materials containing coumarins:
 - Donna species;
 - big ammi;
 - parsnip;
 - figs.

Work 1. Morphological analysis of medicinal plant raw material "Donna herb".

Write down the Latin and Russian names of the producing plants and families.

1. Study herbariums and tables of producing plants, identify diagnostic features for its recognition.
2. Describe the raw material. Write down possible impurities.
3. Prepare a leaf preparation from the surface in chloral hydrate solution, previously boiled in alkali. Examine at low and high magnification of the microscope, find diagnostic features, sketch using the Manual.
4. Write down the chemical composition of the raw material.
5. State the uses of the raw material.

Work 2. Morphological and anatomical analysis of medicinal plant raw material "Parsnip seed fruit".

1. Study the herbarium and tables of the producing plant and identify the diagnostic features to recognise it.
2. Describe the raw material. To make a drawing of the fruit .
3. Make thin transverse sections of the fruit, react for woody elements, examine in chloral hydrate solution.
4. Write down the chemical composition of the raw material.
5. Indicate the pharmacological action and uses of the raw material.

Work 3. Morphological and anatomical analysis of medicinal plant raw material "Fig leaves".

1. Study herbarium and tables of the producing plant, identify diagnostic features for its recognition.
2. Describe the raw materials.

3. Prepare a leaf preparation from the surface in a solution of glycerol, having previously boiled it in a solution of alkali. Examine the preparation under a microscope.
4. Write down the chemical composition of the raw material.
5. Indicate the pharmacological action and use of the raw material..

SELF-MONITORING EXERCISES:

- 1. Specify the terms of harvesting and precautions when collecting raw materials: medicinal melilot, common fig (fig), parsnip.*
- 2. What are the ways of using raw materials containing coumarins? What types of raw materials serve as a source of obtaining drugs: psoralen, beroxan, pastinacin, avisan, floverin, kellin?*
- 3. What impurities are unacceptable when harvesting raw materials of melilot?*