Class 9

Analysis of medicinal plant raw materials containing tannins (II).

PURPOSE OF THE EXERCISE:

1. To learn to recognise medicinal plants containing tannins by external signs and to distinguish them from impurities.
2. To be able to establish the authenticity and good quality of medicinal plant raw materials containing tannins.

QUESTIONS:

1. Medicinal plants and raw materials containing tannins:
- Garden burnet,
- European bistort,
- Tormentilla cinquefoil.

2. Formulas: catechin, pyrogallol, pyrocatechin, phloroglucin, gallic and ellagic acids.

Work 1. Morphological and anatomical analysis of raw materials " Garden burnet rhizomes and roots"

Garden burnet rhizomes and roots - *Sanguisorbae officinalis rhizoma et radix*

Garden burnet - *Sanguisorba officinalis*

Family: *Rosaceae*

Study the producing plant from herbarium specimens and tables. Identify the diagnostic features for its recognition in nature.

Describe the raw material, paying attention to the diagnostic features: colouring of rhizomes and roots from outside and in the break, type of structure.

Make thin transverse sections, carry out a reaction to the woody elements, examine at low and high magnification of the microscope.

Carry out pharmacopoeial qualitative reaction, write the result in the notebook, write a conclusion.

Study FS 2.5.0078.18 "Garden burnet rhizomes and roots" GF XIV edition, compare your results with the requirements of ND. Examine the numerical values.

Make a conclusion about the authenticity of raw materials.

Chemical composition:

Standardisation:

Pharmacological action:

Uses:

Work 2. Morphological and anatomical analysis of raw material of " Bistort rhizomes"

***Bistort rhizomes* - Bistortae rhizomata**

European bistort– *Polygonum bistorta*

Polygonum carneum

Family: *Polygonaceae*

Study the producing plant from herbarium specimens and tables. Identify diagnostic features for its recognition in nature.

Describe the raw material, paying attention to the serpentine curved shape of rhizomes; thickenings in the form of rings on the upper side (traces of attachment of root leaves), dark dots on the lower side (places of attachment of roots); colour outside - dark brown, on the break - pinkish. Under a magnifying glass and with the naked eye, conductive bundles are visible.

Make a thin transverse section of the soaked rhizome of serpentine, stain with floroglucin and hydrochloric acid, enclose in a drop of chloral hydrate. Examine at low and high magnification of microscope.

Carry out the pharmacopoeial qualitative reaction, write the result in the notebook, write a conclusion.

Study FS 2.5.0074.18 "Bistort rhizome" GF XIV edition, compare your results with the requirements of ND. Examine the numerical values.

Make a conclusion about the authenticity of raw materials.

Chemical composition:

Standardisation:

Pharmacological action:

Uses:

Work 3: Morphological and anatomical analysis of raw material " Tormentilla cinquefoil rhizome"

Tormentilla cinquefoil- Potentilla erecta

Family Rosaceae.

Examine the herbarium of the producing plant, highlighting diagnostic features to recognise it in nature. Note the distinguishing features of different species of Tormentilla.

Describe the raw material according to the scheme, paying attention to diagnostic features: indeterminate rhizome shape, consistency, fracture character, colour.

Make thin transverse sections of rhizomes, having previously boiled for 5-10 minutes in water. Examine at low and high magnification of the microscope, find and sketch diagnostic features.

Carry out pharmacopoeial qualitative reaction, write the result in a notebook, write a conclusion.

Study 2.5.0023.15 " Tormentilla cinquefoil rhizomes" GF XIV edition, compare your results with the requirements of ND. Examine the numerical values.

Make a conclusion about the authenticity of the raw material.

Chemical composition:

Standardisation:

Pharmacological action:

Uses:

Self-check questions

1. In what fields of medicine are medicines obtained from raw materials containing tannins used?

2. Specify the diagnostic features of a transverse section of the root of bloodroot.

3. Specify the macroscopic diagnostic features of serpentine raw material, allowing to establish its authenticity.

4. What is the structure of the main tissue of the rhizome of serpentine? What biological feature of the plant is due to this structure?

5. What is the reason for the change in the colour of the rhizome of serpentine rhizome during storage of raw materials?

Situational Challenges:

1. A doctor came to the pharmacy for advice: what types of raw materials can be offered to a patient suffering from colitis. Conduct a consultation. Explain the mechanism of action of these remedies.

2. In your area found industrial thickets of bloodwort. Give recommendations to the harvesting team on the use of the thickets, preventing exhaustion.