Class 7

Analysis medicinal plant material containing chromones and lignans

PURPOSE OF THE STUDY:

1. To learn to recognise medicinal plants containing chromones and lignans by external characters and distinguish them from impurities.

2. To be able to establish the authenticity and good quality of medicinal plants containing chromones and lignans.

QUESTIONS:

1.Characterisation of chromones.

2.Medicinal plants and raw materials containing chromones:

- ammi dentifrice,
- dill.

3.Lignans. Concept. Classification.

4. Physico-chemical properties of lignans.

5. Distribution in the plant world. Localisation.

6. Medicinal plants and raw materials containing lignans: Eleutherococcus prickly; Chinese lemongrass.

Work 1. Morphological and anatomical analysis of raw materials of dill.

1. Study the herbarium of the producing plant, identify diagnostic features for its recognition.

2. Describe the raw materials.

3. Make thin transverse sections of the fruit, react for woody elements, examine in chloral hydrate solution.

4. Examine the chemical composition of the raw material. Indicate its standardisation.

5. Specify the pharmacological action and application of raw materials.

Work 2. Morphological and anatomical analysis of the raw material of Ammi dentalis

1. Study the herbarium of the producing plant, identify the diagnostic features for its recognition and write them down in a notebook.

2. Describe the raw material according to the diagram. Make a drawing.

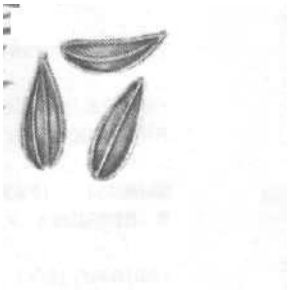

Fig. 1. Fruits of Ammi dentalis

3. Study the FS section "microscopy", write down the diagnostic features in a notebook.

4. Write the chemical composition of raw materials.

5. Specify the pharmacological action and use of raw materials.

Work 3: Study of macroscopic features of raw materials of Chinese lemongrass.

1. Study the producing plant from herbarium specimens and tables.

2 Describe the raw material, highlight the diagnostic features to recognise it.

3. Conclude the authenticity of the raw material from external signs.

4. Write down the chemical composition of the raw material.

5. State the uses of the raw material.

Work 4. Study of medicinal plant raw materials "eleutherococcus prickly rhizomes and roots".

1 Examine the producing plant from herbarium specimens and tables. 2.
2 Describe the raw material, highlighting diagnostic features for its recognition.
3. Carry out qualitative analysis of the raw material.

Qualitative reactions:

1. Apply a few drops of 5% caustic soda solution to a slice or powder, yellow staining appears.
2. Add a few drops of 1% ferric chloride solution to the aqueous decoction of the raw material, green colouring appears (polyphenols).

4. Write down the chemical composition of the raw material.
5. Specify the pharmacological action and use of raw materials.

SELF-MONITORING EXERCISES:

1. What morphological features are characteristic of Ammi major?
2. What is the result of microchemical reaction with Sudan solution when analysing seeds of Chinese lemongrass?
3. List the methods of quantitative determination of lignans in medicinal plant materials.
4. Give examples of chemical-pharmaceutical products from the raw materials of visnaga carrot-shaped.