

## Lesson 1

### Analysis of medicinal plant raw materials containing flavonoids (I).

#### QUESTIONS:

1. General concept of flavonoids. Medico-biological significance of flavonoids.
2. Classification of flavonoids. Basic structural formulae.
3. Medicinal plants and raw materials containing flavonoids:
  - Motherwort species;
  - hawthorn species,
  - Sophora japonica.
4. Formulas: flavan, catechin, leucoanthocyanidin, anthocyanidin, flavanone, flavanone, flavone, flavonol, chalcone, dihydrochalcone, auron, isoflavone, quercetin, rutin, hyperoside, luteolin, apigenin, kaempferol, naringenin.

#### Work 1. Study of morphological features of medicinal plant raw material "Hawthorn fruit".

Hawthorn fruit - *Crataegi fructus*

Producing plants:

*Crataegus laevigata*

*Crataegus dahurica*

*Crataegus monogina*

*Crataegus pentagina*

Family: Rosaceae.

Specify the features of hawthorn species.

Describe the raw material (diagnostic features).

Draw a conclusion about the authenticity of the raw material.

Chemical composition:

Pharmacological action:

Uses

#### Work 2. Morphological and anatomical analysis of raw materials "Motherwort herb"

Motherwort herb - *Leonuri herba*

Producing plant: Common motherwort - *Leonurus cardiaca*

Quinquelobate motherwort - *Leonurus quinquelobatus*

Family: Lamiaceae

Write down the herbarium of producing plants, identifying the diagnostic features.

Describe the raw materials. For macroscopic analysis, soak the leaf in hot water (until softened and straightened) and spread it gently on an oilcloth.

Prepare a surface micro preparation of motherwort leaf. Examine at low and high magnification of the microscope, find and study the diagnostic features. Sketch the microscopy of motherwort leaf.

Draw a conclusion about the authenticity of the raw material.

Chemical composition:

Standardisation:

Pharmacological action:

Uses

### **Work 3: Macroscopic analysis of fruits of Japanese pagoda tree**

Japanese pagoda tree fruit - *Sophorae japonicae fructus*

Producing plant: Japanese pagoda tree -*Sophora japonica*

Family Fabaceae

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

Describe the external signs of the raw material.

Draw a conclusion about the authenticity of the raw material.

Chemical Composition:

Standardisation:

Pharmacological action:

Uses: