

# PHARMACOGNOSTICAL COMPARATIVE ANALYSIS OF THE RHIZOMES OF YELLOW IRIS FROM DIFFERENT GROWING PLACES

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**Introduction.** *Iris pseudacorus* L. is quite common in nature. Its range covers Europe, Asia, North America, parts of Africa. In nature it occurs along waterways, in floodplains. Iris is the ancestor of many varieties and hybrids of Irises. Irises have been bred, hybridized and selected for more than 150 years. There are some 300 species of irises and more than a thousand named hybrids and selections.

There are tannins, essential oil, a glycoside of an isoflavones iridin, organic acids, fatty oils, starch in the rhizomes. Rhizome of *Iris* includes main active ingredient for therapeutic use – unique essential oil, which contains a ketone iron that gives the oil the smell of violets. The Iris roots' has anti-inflammatory, expectorant, enveloping properties. The rhizome was formerly much employed as a medicine, acting as a very powerful cathartic, but from its extremely acrid nature is now seldom used. An infusion of it has been found to be effective in checking diarrhoea, and it is reputed of value in dysmenorrhoea and leucorrhoea. In folk medicine it is used in diseases of the spleen, pneumonia, tonsillitis, women's diseases, treatment of purulent wounds, ulcers, fistulas, and for removing freckles. The decoction of root is used for inflammation of the gums, toothache, and for washing the hair with dandruff.

Medicinal raw materials are rhizomes of Iris, its quality is regulated FS 42-17-72. Rhizomes harvested in the fall or in early spring before growth (April). The raw material consists of whole or cut along the rhizomes, with the tracks cut off roots and leaves.

**Aim:** to carry out morphological and anatomical studies of 7 series of a raw material rhizomes of *Iris pseudacorus* L. from different regions and years of collection, set similar or distinctive features of the *Iris* series from different places of growing, using modern methods and devices.

**Materials and methods.** The objects of study were 7 samples of the rhizomes of *Iris pseudacorus* L. in the flora of Ukraine that was prepared in: 1. Kirovohrad region, village Verblyuzhka (2014); 2. Kharkiv region, village October (2015); 3. Kharkiv region, village Borscheva, (2013); 4. Kharkiv, Botanical Garden of the National University of Pharmacy (2015); 5. Kiev, N. N. Gryshko National Botanical Garden of the National Academy of Sciences of Ukraine (2015); 6. Kharkiv, V.N. Karazin National Botanical Garden of the National Academy of Ukraine (2014); 7. Nikolaev region, Nikolaev (2014).

For macro - and microscopic studies used fresh and fixed in a mixture of alcohol-glycerin-water (1:1:1) plant material. A solution of chloral hydrate and 3% alkaline solution is used as a developing liquid. Cuts and drugs made by known techniques with the surface by the blade from the arm.

Anatomical structure was determined by microscope MBI-6, sections were photographed with the camera CANON IXUS 120.

Determination of loss in mass when dried, general ash carried out according to the methods of SPhU; identification; quantitative content of isoflavonoids was held by spectrophotometric method with wavelength 271 nm; transfer content held on onozid (FS-42 in Grass beans'). Spectrophotometric techniques are used to measure the concentration of solutes in solution by measuring the amount of light that is absorbed by the solution in a cuvette placed in the spectrophotometer.

Morphological investigation. Rhizome of Iris is up to 10 cm in length, up to 3 cm. There is thick, powerful, creeping, branched, the cut has a pink tint. Outside color is earthy-brown, fracture - lilac-pink. Odor is faint and taste is astringent. Comparative analysis of the morphological structure rhizomes' of Iris of 7 samples showed that all the samples of raw iris are identical.

**Results and discussion.** A rhizome is covered by a monolayer epidermis, stomates and trichomes are absent. A border between a primary bark and central cylinder differentiates on the ring of shallow leading bunches that on periphery meet more often, but have little sizes, to the center their amount diminishes and a size grows. According to the structure beams are centralloan. Among cells of the phloem are parenchyma cells filled with simple starch grains concentric. The vessels of vascular bundles are porous and spiral. Cells of stocking parenchyma are large, with thick shells, containing starch, and in the triangular intercellular spaces are found styled square and elongated shape. Conducted microscopic studies of various series of iris testify about the identity of their diagnostic anatomical features.

Identification of phenolic compounds was performed by conventional reactions: 1% ferum (III) chloride, appears dark blue colour.

**Conclusions.** As a result of the research, the following numerical indicators: loss in weight on drying not more than 12.0 percent; total ash – not more than 5.0%. In addition, it was determined that impurities not more than 5.0% (residues of stems and leaves, including those separated during analysis), as well as old dead roots; not more than 5.0% of foreign particles, including not more than 3% of impurities of mineral origin. The sum of isoflavonoids in terms of onozid and the dry raw material should be not less than 1.5%.

Thus, studies can be recommended in the development of the monograph "The rhizome of Iris " to enter it into SPhU.