

effective, highly productive, environmentally friendly technological process. Ultrasound – elastic oscillations and waves whose frequency exceeds 15 – 20 kHz. Ultrasonic waves have a high energy and are able to propagate in solid, liquid and gaseous media.

**Aim of the research** is to study dependence of the yield of extractives on the factors of ultrasonic extraction of corn columns with stigmas.

**Materials and methods.** The object of study – corn columns with stigmas. We used generally accepted standard, described in the literature methods and devices, and new methods of research of drugs that allow to objectively assess their quality, based on the obtained statistically processed results in conducting research. Alcohol–aqueous extraction was obtained by the following method: 1.0 g (exact portion) of raw material was placed in the flask, 30 ml of extractant was added to a certain particle size and extracted for 30 min at a temperature of 60 °C in an ultrasonic bath. In each series of experiments, the values of only one of the factors were changed, leaving the values of the others unchanged.

**Obtained results.** Ethanol was used as an extractant of the following concentrations: 30, 70, 85, 96 %. To study the effect of the degree of grinding of plant material on the yield of the amount of flavonoids, the raw material was subjected to grinding into particles passing through a sieve with a hole diameter of 0.5; 1.0 and 2.0 mm. The dependence of flavonoid yield on the ratio of raw material and extractant with hydromodule 1:10, 1:20, 1:30 was studied. To intensify the processes of transition of biologically active substances from plant raw materials, it is necessary to take into account the temperature factor and the extraction time. The ultrasound extraction time was 10, 20 and 30 minutes. The content of flavonoids in terms of luteolin was determined in the extractions. It is established that the most effective extraction of flavonoids occurs at the following extraction modes: extractant – 70 % ethanol; degree of grinding of raw materials – 1 mm, ultrasonic time – 30 minutes, the ratio of raw materials and extractant – 1:20, the temperature of the ultrasonic bath – 60°C.

**Conclusions.** Factors and conditions of ultrasonic extraction of corn columns with stigmas are established and will be used in further research in the manufacture of dry extract.

## USE OF ACHYRANTHES IN THE TREATMENT OF UROLITHIASIS

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**Introduction.** Treatment of kidney and urinary tract diseases, especially their chronic forms, is often a long, laborious and complex process, in which both underestimation and overestimation of both drug therapy with synthetic drugs and herbal medicine are quite important. Of course, first and foremost, especially in the acute process, should be prescribed a variety of drugs, defined by treatment standards. Withdrawal from the use of drugs in some cases can lead to chronic disease,

complications and irreversibility of the pathological process. This possibility exists in acute glomerulonephritis or pyelonephritis, their exacerbations in the chronic course, high blood pressure, severe edema and the like. Phytonutrition is a modern innovative technology that ensures the standards of phytomedicines. Phytoning is an independent medical scientific and technological concept of phytotherapeutic direction, based on the philosophy of unity of wisdom of nature and scientific and technical innovations. Due to this, medicines are fundamentally different from traditional herbal medicines: each drop or tablet always contains the same amount of active substances that provide a therapeutic effect, and side effects are minimized. Promising raw material for the treatment of this pathology with pronounced anti-inflammatory and antibacterial activity is straw rough. Modern pharmacological studies have shown that straw straw has many important types of biological activity: anti-inflammatory, antibacterial, immunomodulatory, antioxidant, antiosteoporosis, neuroprotective and others.

**Aim of the research** is to study the chemical composition of achyranthes for phytotherapy of urolithiasis.

**Materials and methods.** The object of study – achyranthes roots. We used generally accepted standard, described in the literature methods and devices, and new methods of research of drugs that allow to objectively assess their quality, based on the obtained statistically processed results in conducting research.

**Obtained results.** In medicine, the root is often used, which has a rich chemical composition: triterpene saponins (oleanolic acid and its glycoside), phytosteroids (ecdysterone, incosterone, rubosterone), polysaccharides, a large number of potassium salts, amino acids (glycine, arginine, serine), threonine, L-proline, L-tyrosine, L-tryptophan, L-valine, L-phenylalanine, leucine), alkaloids and coumarins. Steroids are one of the main groups of BAS in the roots of straw flowers. According to the Chinese Pharmacopoeia,  $\beta$ -ecdysone is used as a standard substance for the evaluation of this LRS. In addition to ecdysterone, incosterone and rubosterone, Wang Q.H and co-authors isolated new steroid compounds: surfurosterone A, achirantesterone A, rapontisterone B and stachysterone D.

**Conclusions.** The chemical composition for the treatment of urolithiasis has been studied, which will be used in further studies of the pharmacological properties of medicinal raw materials.