

The **aim** of the work was to study the physical and chemical properties and indexes of safflower oil (unrefined oil).

Materials and methods. Seeds of safflower harvested during the period of full ripening in 2017 on the experimental part of the botanical garden of NUPh. With the help of Soxhlet apparatus (solvent – hexane), we received the oil of this plant. The study of the basic physical and chemical constants (acid value, iodine number, saponification value) was carried out in accordance with the requirements of the State Pharmacopoeia.

Results and discussion. We analyzed the organoleptic properties of safflower oil and definite indexes. As a result of our research, we determined the importance of the physicochemical constants characteristic of safflower oil. Results are represented in the table 1.

Table 1

Physical and chemical characteristics of safflower oil

№	Characteristic	Results
1	Relative density	0,919-0,924
2	Refractive index	1,473-1,474
3	Iodine number, (J2/100 g)	130-140
4	Acid value (mg KOH/g)	0,96-5,76
5	Saponification value (mg KOH/g)	186-198
6	Peroxide value	9,0

The obtained data was processed statistically using the methods of variation statistics.

Conclusions. In the course of the study, the physical and chemical characteristics of the oil of safflower were determined. Safflower oil meets the requirements of the State Pharmacopoeia and is promising for further study in the pharmacological aspect and food production.

DEVELOPMENT OF COMPOSITION AND TECHNOLOGY OF TABLETS FOR PROPHYLAXIS AND TREATMENT OF UROLITHIASIS

Bikhovets M. M.

Scientific supervisor: assoc. prof. Slipchenko G. D.

National University of Pharmacy, Kharkiv, Ukraine

galinaslipchenko@ukr.net

Introduction. Urolithiasis, is a kidney disease characterized by the formation of sand and stones in the organs of the urinary system. According to researchers, the disease has a tendency to increase, which makes the problem of urolithiasis even more urgent. The largest percentage of patients are middle-aged people between the ages of 20 and 40 - the most able-bodied and socially active. The most optimal means for the treatment of kidney diseases are drugs based on medicinal plant material. With phytotherapy there is an opportunity to improve the quality of life of patients, their social and labor activity. The need of the pharmaceutical market of Ukraine for such drugs is not satisfied. Therefore, creation of new drugs for the prevention and treatment of urolithiasis is an urgent task of the present.

Aim. The purpose of this work is to study the physico-chemical and pharmaco-technological properties of raw materials, mixtures of tablet masses, creation of a scientifically based optimal composition and technology of the preparation in the form of tablets, as well as the development of a technological scheme for the production of the drug.

Materials and methods. The subject of research was selected: crushed and dried roots of parsley and celery and beebread; the choice of auxiliary substances and the creation of solid dosage forms in the form of tablets on their basis.

Results and discussion. The analysis of the range of medicinal products for the treatment of urolithiasis in the pharmaceutical market of Ukraine has been carried out and the necessity of creating new combined herbal preparations has been established. On the basis of crystallographic, pharmaco-technical and physico-chemical research, a combined preparation in the form of tablets based on medicinal raw materials for the prevention and treatment of urolithiasis has been developed.

Modern approaches to pharmacotherapy of kidney diseases have been theoretically grounded and feasibility of the chosen active substances combination in one dosage form has been demonstrated до фармакотерапії.

Rational composition and technology of tablets involving wet granulation method have been developed and justified. As auxiliary substances potato starch, polyvinylpyrrolidone solution K25, microcrystalline cellulose, calcium stearate and talc have been introduced.

Conclusions. Based on the research conducted, a rational composition and technology of tablets for the prevention and treatment of urolithiasis on the basis of plant material was developed..

CARBOXYLIC ACIDS AND ESSENTIAL OILS OF *PRUNUS PADUS* L.

Bogachik Ju. R., Akhmedova L. E.

Scientific supervisor: assoc. prof. Akhmedov E. Yu., assist. Samoilova V. A.

National University of Pharmacy, Kharkiv, Ukraine

Super.dan.96@ukr.net

Introduction. Carboxylic acids of leaves and fruit, as well as essential oil of flowers of *Prunus padus* were determined on chromatograph Agilent Technologies 6890 N with a mass spectrometer detector 5973 N. Fruit of *P. padus* contain 28 carboxylic acids, 11 of which are fatty acids, 5 aromatic, 6 dibasic, 2 α -hydroxy acids, and 1 ketoacid. The dominant acids are levulinic, citric, oleic, linoleic, malic, and palmitic. Leaves of *P. padus* contain 33 carboxylic acids, 15 of which are fatty acids, 9 aromatic, 6 dibasic, 2 α -hydroxy acids, and 1 ketoacid. The dominant acids are oxalic, palmitic, malic, citric, and linolenic. The total content of carboxylic acids in fruit of *P. padus* is 3.0 %, in leaves – 1.7%. 37 components were identified in the composition of essential oil of flowers of *P. padus*. 12 of them are monoterpenoids, 2 sesquiterpenoids, 2 diterpenoids, 1 triterpene, 6 aromatic compounds, 14 hydrocarbons. From terpenoids in raw material a diterpene alcohol manool and a triterpene squalene prevail, from aromatic compounds – carvacrol and β -phenylethyl alcohol.

Aim. *Prunus padus* L. (*Padus avium* Mill., *Padus racemosa* (Lam.) Gilib.) from the *Rosaceae* Juss. family grows wild and it is widely cultivated in Ukraine. The main active substances of *P. padus* are tannins, flavonoids, and organic acids. Previously we have studied fragrant substances of leaves, as well as amino acids, macro- and microelement composition of flowers and leaves of this plant. The goal of this work was to research the acid composition of leaves and fruit and essential oil of flowers of *P. padus*.

Materials and methods. Flowers of the plant were harvested in May 2013, leaves and fruit, accordingly, in June and August 2014 in the Botanical Garden of National University of Pharmacy. The identification of raw material was carried out based on herbarium plants stored in the Herbarium fund of the Department of Pharmacognosy, National University of Pharmacy. Carboxylic acids of leaves and fruit, as well as essential oil of flowers of *P. padus* were determined by Gas chromatography–mass spectrometry methods on an Agilent Technologies 6890 N chromatograph with a 5973 N mass spectrometric detector. Carboxylic acids were determined using a modified method [5, 6]. Dried and ground raw material (50 mg) was placed in a vial, treated with an internal standard (2 mL, 50 micrograms of tridecane in hexane) and methylating agent (1 mL, 14% BCl_3 in MeOH, Supelco 3-3033). The mixture was stored in a hermetically sealed vial for 8 h at 65°C, decanted from the precipitate of raw material, and diluted with purified H_2O (1 mL). Methyl esters of the acids were extracted by CH_2Cl_2 (0.2 mL) with thorough shaking several times during an hour. Then, the obtained extract of methyl esters was chromatographed. A sample (2 μL) was injected onto the chromatography column in splitless mode, i.e., without dividing the stream. This avoided losses by division and increased considerably the sensitivity of this method. The sample injection flow rate was 1.2 mL/min over 0.2 min; the chromatography column was INNOWAX capillary (30 m \times 0.25 mm), carrier gas (He) flow rate 1.2 mL/min, 250°C detector and vaporizer temperature, temperature thermostat programmed from 50 to 250°C at 4°C/min. The NIST05 and Wiley 2007 libraries with a total number of spectra > 470000 in combination with AMDIS and NIST programs for identification were used to identify the constituents. The internal standard method was used for calculations. A sample for analysis was obtained from dry flowers of *P. padus* by steam distillation and post-processing of the distillate with pentane of special purity. The analytical conditions included an HP-5MS (30 m \times 0.25 mm)