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.

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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×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×0.25 mm)

quartz capillary chromatography column, carrier gas (He) flow rate 1mL/min, sample volume 0,1-0,5μl, sample injection with 1/50 flow division, temperature thermostat programmed from 50 to 220°C at 4°C/min and 250°C detector and vaporizer temperature.

Results and discussion. As seen from the results of the study, 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 (mg/kg) are levulinic (7958.3), citric (5806.3), oleic (4450.6), linoleic (3802.6), malic (3066.9), and palmitic (1105.5). 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 (mg/kg) are oxalic (4287.4), palmitic (3853.4), malic (2066.2), citric (1278.3), and linolenic (1106.3). 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. The diterpene alcohol manool (11.28%) and the triterpene squalene (2.12 %) prevail from terpenoids in the raw material, carvacrol (1.52 %) and β-phenylethyl alcohol (1.16 %) - from aromatic compounds.

Conclusions. Carboxylic acids of leaves and fruit, as well as essential oil of flowers of *P. padus* were determined by the method of gas chromatography–mass spectrometry. Fruit of *P. padus* contain 28 carboxylic acids, leaves – 33. The total content of carboxylic acids in fruit of *P. padus* is 3.0 %, in leaves – 1.7 %. 12 monoterpenoids, 2 sesquiterpenoids, 2 diterpenoids, 1 triterpene, 6 aromatic compounds, 14 hydrocarbons were identified in the composition of the essential oil of flowers of P. padus. The obtained results will be considered during the standardization of leaves and fruit of *P. padus*, and also in the development of biologically active substances from them.

RESEARCH OF BIOLOGICALLY ACTIVE COMPOUNDS OF *AVENA SATIVA* L. SPROUTS GROWTH IN VARIOUS DRYING CONDITIONS

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Introduction. Oats (*Avena sativa* L.) is an annual herb of the *Gramineae* (*Poaceae*) family, one of the most important food and forage crops. For today the chemical composition of oats is well studied. According to scientific sources, the plant contains proteins, lipids, polysaccharides, enzymes, vitamins and minerals. In the grass of oats at various stages of vegetation, a large number of BAC of phenolic nature are identified – *phenol carboxylic acids*, hydroxycinnamic acids, quinones, flavonoids (flavonols, flavones, chalcones, anthocyanins), flavonolignans, phenolic alkaloids.

Aim. To determine the quantitative content of BAC of the oat sprouts grown and dried in different conditions in order to establish the possibility of its use as a source of medicinal products.

Materials and methods. The objects of our study were two-week sprouts of oats sustained for 6 days in different conditions: under the sunlight (the window sill of a well-lit room, the length of the light day – about 12 hours) and under artificial light (10 W LED bulb, the duration of the lighting period is about 12 hours a day). The raw material was dried in two ways: under microwave radiation (800 W, 2450 GHz, 4 minutes) and in the shade at room temperature.

Quantitative determination of BAC was performed by methods of direct and differential spectrophotometry using the spectrophotometer Thermo Scientific Evolution 60S.

Results, discussion and conclusions. As a result of the quantitative study of flavonoids, it has been established that in sprouts grown under sunshine and under artificial lighting, the content of flavonoids differs depending on the method of drying. The largest amount of them was found in the sample that grew under artificial lighting and dried in the shade (1.62%), while in the sample that grew under the sunlight and drying in the shade content of flavonoids was 1.39%. In oats sprouts growing under artificial lighting and dried under microwave radiation content of flavonoids was 1.39%, in the sample that grew under the sunlight and dried in a microwave oven – only 0.31%. Thus, it has been experimentally proved that the intensity of light and methods of drying significantly affects the accumulation of BAS in the plant organism.