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.

Probably that under the influence of microwave rays there are destructive processes that lead to the destruction of the molecules of flavonoids.

PHYTOCHEMICAL RESEARCH OF BIOLOGICALLY ACTIVE COMPOUNDS OF THE LEAVES OF *GOSSYPIUM HIRSUTUM*

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Introduction. Cotton (Latin Gossypium hirsutum L.) is an annual plant from Malvaceae family. It is the most common species from the genus Cotton in Central Asia, the Caucasus and North America. The main spinning culture of the countries of Central Asia, giving cotton fiber, processed into yarn, which is used for the manufacture of a wide variety of fabrics, threads, knitwear, cord and other products. Cottonseed oil is obtained from seeds and used in food; many products are produced from it: margarine, glycerin, soap, lubricants, etc.

The stock of all parts of the cotton plant is estimated millions of tons. The usage of such a huge mass of cotton waste to obtain highly valuable biologically active substances (BAS) can have a great economic effect.

Aim. The aim of this study was the phytochemical research of biologically active substances (BAS) of the leaves of *Gossypium hirsutum*.

Materials and methods. The object of the study was the leaves of *Gossypium hirsutum* harvested in Turkmenistan in Mary region in the flowering phase in the summer of 2017. The composition of the main groups of BAS was determined by generally accepted qualitative reactions and chromatographic analysis. The quantitative content of water-soluble polysaccharides (WSP) and pectins in the raw material was determined by gravimetric method, the content of hydroxycinnamic acids, flavonoids, polyphenolic compounds by spectrophotometry.

Results and discussion. According to the results of the study it was established that the leaves of the cotton plant contain polysaccharides, pectins, organic acids, hydroxycinnamic acids, flavonoids, tannins, triterpene saponins. The content of WSP is 8.7%, pectins - 9.2%, hydroxycinnamic acids - 1.34%, flavonoids - 0.65%, polyphenolic compounds - 1.47%.

Conclusions. Obtained results show the possibility of using cotton leaves as a source of BAS.

FEATURES OF MORPHOLOGICAL STRUCTURE OF RAW MATERIALS OF ORCHIDACEAE FAMILY REPRESENTATIVES

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Introduction. Search of new effective medicines with low toxicity is a relevant problem of pharmaceutical science. Medicinal plant materials remain an inexhaustible source for creation of new medicines, thus, a systematic pharmacognostic study of plants, that are cultivated for a long time, is up-to-date. Representatives of the Orchidaceae family belong to such plants. For the first time these plants were applied in national medicine in the X century in China. They were used as a part of fever medicine, nervous illnesses on inflammations of the skin. Eastern medicine long since uses orchids for preparation of remedies for many illnesses. These plants have analgesic effect. They are applied as an agent to an adhesion of wounds and ulcers, as antidotes from snake bites. Tonic beverages are made of orchids. Tea from flowers reduces strain, improves vision and immerses in a quiet dream. Leaves of orchids are applied in the treatment of diabetes and immune system strengthening. And tubers of orchids are applied in poisonings.

Aim. Study of morphological structure of *Phalaenopsis* leaves with determination of diagnostic features.