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NATIONAL UNIVERSITY OF PHARMACY

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DRUGS DEVELOPMENT**

Abstracts of XXV International Scientific  
And Practical Conference  
Of Young Scientists And Student

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For a wide audience of scientists and pharmaceutical and medicinal employees.

**UDC 615.1**

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.

**Materials and methods.** Aerial part of *Phalaenopsis* was collected during blossoming and full expansion of a leaf blade – March-April, 2017 and October-November, 2017.

**Results and discussion.** Orchids are perennial herbaceous plants. The structure of the leaves corresponds to the specific habitat of the plant. Species that typically bask in sunlight, or grow on sites which can be occasionally very dry, have thick, leathery leaves and the laminae are covered by a waxy cuticle to retain their necessary water supply. Shade-loving species, on the other hand, have long, thin leaves. Leaves of an orchid have length up to 30 cm, color of leaves ranges from light green to dark green, but there are species with unusually painted foliage. The leaf is simple, sessile, entire, very dense, fleshy, succulent. Venation is reticulate, trichomes are absent. *Phalaenopsis* usually has up to 6 leaves, but in large healthy samples – up to 10-12 leaves are sparsely met. Usually, when the plant gives a new leaf, an old one dries out.

**Conclusions.** The obtained data will be used for a further research of representatives of orchid family which are prospective plants for obtaining new types of medicinal plant material of relevant orientation of action.

## PHYTOCHEMICAL RESEARCH CONTENTS OF ESSENTIAL OIL WITH THE ACCUMULATION OF AZULENE DERIVATIVES IN THE HERBS SPECIES OF ACHILLEA L.

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**Introduction.** The Asteraceae family (Asteraceae) is known to be the richest species in the species (over 30,000), which are almost 2,000 genera. Its representatives are common on all continents (except Antarctica) and are found in various plant groups. In the flora of Ukraine there are 695 species belonging to 121 species. Among the asteric species, such life forms as grasses, half-edges, bushes, rarely wood are widespread. The Achillea L. (woody) family of Asteraceae is distinguished by morphological and species diversity. It combines over 200 species, which are distributed almost worldwide, but most of them are found in the northern hemisphere and in Ukraine, where germinates over 23. They are most common: on meadows, in the steppes, meadows, forests, pastures, near roads, in the deserts of east and south-east of Ukraine. In science and folk medicine, species of the genus Achillea L. are used as hemostatic, healing and anti-inflammatory drugs, as well as for improving digestion. In modern medicine, complex drugs from plant material of species of the genus Achillea L. are used: herbal infusions (1:10), tree extract, oil extract of wood, antiperspirant, anti-hemorrhoids, appetite and gastric tea (Ukraine); Rotokan, Vundekhil, phytolabs "The original recipe", tincture of complex Pankov, Phytone SD (RF); Menodoron-Tropfe, Original grosser Bittner Balsam, (Austria); Floradix Multipretten Kruuter-Dragees, Siligutal-Tropfen, Doppelherz, Stomachysat Burger, Salus Schafgraben-Tropfen, Befelka-Tinctur, Schamill Schafgarbe-Extrakt, Alasenn Krutergranulat, Dr. Kleinschrod's. They include: *A. submillefolium* Klok. to Krytzkathe, *A. millefolium* L., *A. collina* J. Becker ex Reichenh., *A. euxina* Klok., *A. inundata* Kondr., *A. pannonica* Scheele., *A. setacea* Waldst. to Kit., *A. steposa*, *A. distans* Waldst. to Kit., *A. carpatica* Blocki ex Dubovik, *A. stricta* (Koch.). And also the section Filipendulinae (DC.) Afan. The most famous species of which: *A. taurica* Bieb. (Crimean), *A. leptophylla* Bieb., *A. micrantha* Willd.; *A. filipendulina* Lam.; *A. micranthoides* Klok.

The following phytochemical studies were selected for species containing higher concentrations of essential oil and azulenes in its composition, representatives of the Filipendulinae (DC.) section (*A. micranthoides* Klok.), and Millefolium (Mill.) Koch. (A. It has been established that the grass species of the genus Achillea L. also contains: flavonoids, hydroxycinnamic acids (hydroxycaric acid), flavonoids, hydroxycinnamic acids, vitamins K<sub>1</sub> and C, saccharides, carotenoids, amino acids, inorganic elements, tannins echovyny. azulene derivatives (S10N8) (bytsyklo- [5.3.0] -deka-1, 3, 5, 7, 9 - pentaen) is the source of many useful biological properties.

Plants that contain high concentrations of azulene derivatives (guayasuln, hamasulen, etc.) are widely used in official and folk medicine. Azulene derivatives are non-toxic substances. It has been established that LD<sub>50</sub> of white mice with intra-muscle injection of khamasulin is 3 g / kg. In effective doses,

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