

MINISTRY OF PUBLIC HEALTH OF UKRAINE
NATIONAL UNIVERSITY OF PHARMACY

**TOPICAL ISSUES OF NEW
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Abstracts of XXV International Scientific
And Practical Conference
Of Young Scientists And Student

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Book of Abstracts includes materials of Scientific and Practical Conference of Young Scientists and Students “Topical issues of new drugs development”. Materials are grouped according to the main directions of scientific, research and educational work of the National University of Pharmacy. Teoretical and practical aspects of the synthesis of biologically active compounds and development of medicinal substances on their basis; standardization of drugs, pharmaceutical and chemical-technological analysis, the study of raw materials and herbal remedies development, modern drug technology and extemporal recipe; biotechnology in pharmacy, modern advances in pharmaceutical microbiology and immunology, clinical trials of new drugs, pharmaceutical care for prescription and OTC-drugs, evidence-based medicine, modern pharmacotherapy, socio-economic studies in pharmacy, marketing management and pharmacoeconomics during the development, implementation and use of drugs, quality management in development, production and trafficking of drugs; information technologies in pharmacy and medicine; basics of pedagogy and psychology; social science; philology are presented. Also in book there are published material ob All-ukrainian contest of student scientific work on speciality “Pharmacy, Industrial Pharmacy”.

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

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PROSPECTS OF MANGO PLANT MATERIAL APPLICATION IN PHARMACY

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Introduction. One of the important tasks of modern pharmacy is the search for new species of medicinal plants with sufficient raw materials base for creation of effective drugs on their basis, the organization of industrial production with the use of complex processing of raw materials, and developing appropriate methods of quality control. Our attention was drawn to the plant material of Indian mango - *Mangifera indica*, a representative of the *Mango* genus, *Anacardiaceae* family, that is cultivated worldwide in areas with suitable climate.

Aim. To conduct a literature review on raw materials of *Mangifera indica*.

Materials and methods. Analysis of available literature sources over the past 10 years.

Results and discussion. This is an evergreen tree, which reaches forty feet in height. There are also dwarf varieties. Young leaves have nice reddish, and ripe ones – dark red color. The flowers are small, yellow, collected in a small panicle. The fruits have bright yellow to orange flesh with smooth skin. Some varieties of this plant can pollinate themselves. If the night temperature is below 13 degrees or there is a high humidity level, the fruits won't just set. The seeds of the fruit can also be eaten roasted or boiled. The tree loves light and air, which is why it is planted in an open area. Mangoes are rich in vitamins A, B, C, D and E. Moreover, the vitamin C content can reach up to 175 mg/100 g of fruit flesh. In addition, the fruits are characterized by a high content of such sugars as sucrose, xylose, glucose, sedoheptulose, fructose, maltose, mannoheptose. Mangoes are rich in essential amino acids and carotenoids. Minerals that are abundant in mango fruits are calcium, phosphorus, iron. This is enough to assume that Mango has a rich mineral composition. The fruit peel and leaves of mango tree contain tannin; the leaves also have a strong herbal tranquilizer. Mango is used for strengthening the immune system, healing of skin cells, slowing the ageing process. It is believed that the fruit prevents and relieves stress, tension and improves mood. Dyspepsia, dysentery, diarrhea, hemorrhoids, constipation are well cured with the pulp of unripe mango.

Conclusions. The plant material of Indian mango is a promising material for further study and development of new drugs based on it.

PHYTOCHEMICAL ANALYSIS OF THE LEAVES OF MALUS DOMESTICA WILLIAMS PRIDE VARIETY

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Introduction. Currently, much attention is paid to the study of medicinal plants, which are typical representatives of the flora of Ukraine and is widely cultivated in its territory. One of such plants is the domesticated Apple – *Malus domestica* Borkh. of the rose family – *Rosaceae*. Recent studies have shown that apples contain lots of vitamins C and P, flavonoids, carbohydrates and organic acids. They are useful for people with atherosclerosis, hypertension, rheumatism. Sour apples are recommended for diabetes and obesity, diseases of the gastrointestinal tract with low acidity, iron deficiency anemia; sweet – in cardiovascular diseases, gout, kidney stones and gall bladder. On the territory of Ukraine is grown a large number of different Apple varieties – White filling, glory to the Winners, Snow Calvin and the like. But the chemical composition of biologically active substances of most varieties is unclear, which leads to the relevance of the chosen research topics.

Aim. The aim of this work was the phytochemical investigation of the leaves of apple Williams Pride variety.

Materials and methods. The presence of biologically active substances was ascertained by qualitative reactions and chromatography on paper and thin layer of sorbent. Quantitative determination of

the total free organic acids content was performed by titration with a 0,1 M solution of sodium hydroxide. The total content of hydroxycinnamic acids and amino acids was determined by spectrophotometry. Determination of quantitative content of the sum of oxidizable polyphenols was carried out permanganometric method in the Leventhal modification, using as the titrant 0,02 M solution of potassium permanganate. Quantitative analysis of the amount of water-soluble polysaccharides in leaves of apple Williams Pride variety was carried out by gravimetric method.

Results and discussion. We have found the presence of polysaccharides, organic, hydroxycinnamic and amino acids, flavonoids, tannins. In the result of quantitative determination it is established that the total content of free organic acids in terms of malic acid in leaves of apple Williams Pride variety made up 6,78%, of the hydroxycinnamic acids in terms of chlorogenic acid was 3,31%, of amino acids terms of leucine – 0,53%, the sum of oxidizable polyphenols in terms of tannin – 6,46%, the amount of water-soluble polysaccharides of 7,25%.

Conclusions. The obtained experimental data show the prospect pharmacognostical further investigation of the leaves of apple Williams Pride variety and will be used in future work in the standardization and development of the relevant sections of the quality control methods of raw materials that were researched.

HOYA CARNOSA IS A FLESHY PROMISING MEDICINAL PLANT

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Introduction. The requirements of today require the opening of new horizons in practical pharmacy. Our attention was attracted by the Hoya flesh plant, or the wax ivy – Hoya carnosa, the Asteroid family – Asclepiadaceae. The genus Hoya unites 250 to 300 species. Hoya fleshy – evergreen, honeydewed liana up to 6 m in length. Homeland South – East Asia, the western coast of Australia, Polynesia. Widely cultivated as decorative. Hoya flesh is used as an antiseptic, bactericidal remedy for skin diseases (rashes, acne), leaves are used in boils and carbuncles. The moisture content of raw materials was studied.

Aim.: To study the morphological structure of a series of leaves of hoya fleshy.

Materials and methods: We investigated 7 series of raw materials, which were prepared in January- February 2018 from self – cultivated specimens. Prepared microdermabrasions from freshly collected leaves and fixed in a water–ethanol–glycerin mixture (1:1:1). The study was done on microscope MC -10 and “Granum”. The results of the research were photographed using a “Samsung” digital camera. Photoshop CS5 to process photos was used.

Results and discussion: Leaves are opposite, simple, short truss. The leaflet is integral, the edge is integral, the peristaltic, the tip of the base is broadly wedge – shaped. The sheet plate is 9,8 – 10,4 cm in width, above a shiny, leathery, dark green color, sometimes with small white spots. The central vein and a few large sized veins are slightly pushed. The middle central vein and veins of the second order are sharply convex, the color of the leaf plate is slightly lighter than the upper surface. The petiole is light – colored in color in the length of 2,0–3,2 cm and 0,3–0,6 cm wide. When the leaf blade is released. With microscopic analysis, the leaves were found to be glistostatic, stomata of the anisotypic type, sporadically, short, simple hairs occur. Leaves dorsiventral type of structure. Petiole and central vein single – breasted.

Conclusions: Diagnostic features of the morphological structure of hoye leaves are established. This is the type of leaf plate, its consistency, color, as well as the type of anatomical structure of the leaf plate, the type of peristome and the one - sidedness of the central vein and stalk.

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