SCIENTIFIC AND PRACTICAL ASPECTS OF THE USE OF ROSEHIP (ROSA L.) IN TRADITIONAL AND MODERN MEDICINE

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Abstract. *This scientific article presents a comprehensive analysis of the medicinal plant rosehip (Rosa L.), focusing on its botanical and morphological characteristics, ecological adaptability, geographical distribution, phytochemical composition, and its application in traditional and modern medicine. Special attention is paid to biologically active compounds found in rosehip fruits, including ascorbic acid, flavonoids, carotenoids, pectins, organic acids, and trace elements, as well as their biological mechanisms of action. The immunomodulatory, antioxidant, anti-inflammatory, and metabolism-regulating properties of rosehip are substantiated on the basis of scientific literature. Comparative analysis of studies conducted by researchers from Uzbekistan and CIS countries (Russia, Ukraine, Kazakhstan, and others) in the field of pharmacognosy and phytotherapy is presented. The role of rosehip in preventive medicine, pharmacology, and clinical practice is scientifically justified, highlighting its significance as a natural source of biologically active substances.*

Keywords: *rosehip, Rosa L., medicinal plants, phytotherapy, ascorbic acid, antioxidants, immunity, biologically active compounds, CIS researchers.*

Introduction. Medicinal plants represent one of the oldest therapeutic resources formed through the long-standing interaction between humans and nature. Throughout the history of Ancient Eastern, Greek, and Arabic medicine, herbal remedies served as primary therapeutic agents, and their relevance remains

significant in modern healthcare systems [1]. In recent decades, increasing environmental challenges, the prevalence of chronic diseases, and the adverse effects associated with synthetic pharmaceuticals have intensified global interest in natural medicinal products [2]. Within this context, phytotherapy is increasingly regarded not only as a therapeutic approach but also as an effective means of disease prevention, enhancement of adaptive capacity, and strengthening of immune defense mechanisms. One of the most valuable medicinal plants with high biological activity is rosehip (Rosa L.), which has been extensively used in folk medicine for centuries. Contemporary scientific research provides pharmacological and biochemical evidence supporting the traditional use of rosehip and confirms its therapeutic potential [3].

Main Part. Botanical and Ecological Characteristics of Rosehip. Rosehip belongs to the Rosaceae family and is a perennial, deciduous, thorny shrub morphologically similar to wild forms of cultivated roses. The plant typically reaches a height of 1–4 meters, while under favorable climatic and soil conditions in foothill and mountainous regions it may grow up to 5–6 meters [4]. The stems are flexible, highly branched, and covered with dense epidermis and sharp thorns, contributing to the plant's resistance to drought, low temperatures, and strong winds. Leaves are pinnate, consisting of 5–9 leaflets, and exhibit high photosynthetic activity. Flowering occurs from May to July, with flowers varying in color from white and pale pink to deep red, often possessing a distinct aroma. The fruit is an oval or ellipsoid red hip containing numerous hairy seeds, while the fleshy pericarp represents the primary medicinal raw material [5]. In Uzbekistan, more than 13 species of rosehip have been identified, including Rosa canina, Rosa fedtschenkoana, and Rosa beggeriana, whereas Rosa canina, Rosa majalis, and Rosa rugosa are widely studied in CIS countries [6].

Methodology. The study employed methods of systematic literature review, comparative analysis, synthesis, and generalization. Scientific publications by researchers from Uzbekistan, Russia, Ukraine, and Kazakhstan concerning the

phytochemical composition, pharmacological properties, and clinical applications of rosehip were analyzed. Additionally, traditional uses of rosehip in folk medicine were compared with evidence-based scientific findings to assess their efficacy and relevance in modern medical practice.

Analysis. Phytochemical Composition and Biological Activity of Rosehip. Numerous scientific studies indicate that rosehip fruits are among the richest natural sources of ascorbic acid. According to Russian pharmacognostic studies, the vitamin C content in rosehip fruits ranges from 1000 to 4000 mg% [7], which significantly exceeds that of many commonly consumed fruits. I.I. Brekhman described rosehip as a “natural polyvitamin concentrate,” emphasizing its general tonic and adaptogenic effects on the human body [8]. Ukrainian researchers have demonstrated that flavonoids and carotenoids present in rosehip possess strong antioxidant properties, protecting cells from oxidative stress and free radical damage [9]. Studies conducted in Kazakhstan have confirmed the positive effects of rosehip infusions on the cardiovascular system, including strengthening of vascular walls and prevention of atherosclerosis [10]. Furthermore, rosehip preparations have been shown to improve gastrointestinal function, stimulate hematopoiesis, enhance detoxification processes, and support metabolic regulation [11]. These properties make rosehip an important component of both therapeutic and preventive medicine.

Results. The analysis revealed that rosehip fruits possess high biological, pharmacological, and prophylactic value. Scientific evidence from CIS countries confirms the immunomodulatory, antioxidant, and metabolism-regulating effects of rosehip-based preparations. Herbal products derived from rosehip are effective in the комплекс treatment of vitamin deficiencies, respiratory infections, cardiovascular disorders, and gastrointestinal diseases, supporting their widespread use in clinical and preventive practice.

Conclusion. Rosehip (Rosa L.) is a valuable medicinal plant with significant therapeutic and biological potential. Its rich content of vitamins and biologically active compounds plays an important role in maintaining and improving human

health. Scientific research conducted in Uzbekistan and CIS countries substantiates the traditional use of rosehip and confirms its pharmacological efficacy. Future research should focus on the development of new pharmaceutical formulations based on rosehip, comprehensive clinical trials, and the integration of these products into evidence-based medical practice.

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