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OVERVIEW OF THE CURRENT STATE AND TRENDS IN THE PRODUCTION OF PLANT EXTRACTS

ОГЛЯД СУЧАСНОГО СТАНУ ТА ТЕНДЕНЦІЙ ВИРОБНИЦТВА РОСЛИННИХ ЕКСТРАКТІВ

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Today, more than 80% of the world's population uses herbal medicines. Having a complex effect on the body, they realize several therapeutic effects. Phytopreparations, phytotherapeutic preparations are any extracts or active substances obtained from medicinal plant raw materials, or their combination in a certain medicinal form, which determines the finished consumer product and is used for the treatment or prevention of diseases. The main difference between herbal preparations is that they contain several groups of substances, which are conditionally divided into active, accompanying and ballast. Extracts from plant raw materials are obtained using various technological processes: extraction, distillation, pressing, fractionation, purification,

concentration or fermentation. According to the method of production, herbal preparations are divided into those produced by the pharmaceutical industry and extemporaneous (pharmacy or home) preparation. Extemporaneous aqueous infusions, decoctions or teas, alcohol tinctures, syrups, ointments are prepared from plant raw materials, juices are squeezed from fresh raw materials. Phytopreparations of industrial production contain: the amount of biologically active substances (galenic preparations, tinctures, extracts, juices); purified amount of active substances (new galenic preparations); primary processing products (essential and fatty oils, gums, resins, etc.). The main stage of the creation of medicines is pharmaceutical development, at this stage not only the foundations of quality, but also the effectiveness and safety of use are laid [1, c. 143-146, 2. c. 54-57.]. The objects of development research are all components of the substance – active pharmaceutical ingredients and excipients, dosage form, technological process and packaging materials, microbiological properties of drugs and compatibility of components. An important stage in the production of herbal preparations is the extraction of raw materials, which is determined by the general laws of mass transfer, the properties of plant cells, and the physicochemical affinity of the extractant and the extracted substance. Extraction is a complex process that includes dialysis, desorption, dissolution, and diffusion occurring randomly and simultaneously as one common process. In the pharmaceutical industry, extraction is widely used to obtain preparations from plant raw materials (tinctures, liquid, thick, dry extracts, concentrated extracts, purified (new galenic) preparations, extraction from fresh plants, etc.). This form of processing is more rational, because thanks to it, the resorption processes are accelerated, eliminating the possibility of overloading the body with unnecessary substances, and better conditions are created for the stabilization and standardization of raw materials. In addition, extracts from plant raw materials in the form of tinctures, thick, dry extracts are used to obtain tablets, capsules, ointments, gels and other medicinal forms. The choice of the optimal extractant is one of the main issues in the production of herbal remedies, since the amount of extracted active substances and the biological activity of herbal preparations depend on it. An important property of the extractant is selectivity, which characterizes its ability to preferentially extract one of two, three or more components. Therefore, the extractant that dissolves the maximum amount of one component and the minimum amount of others is considered the most acceptable. Selective properties of extractants are due to the difference in interaction with the components of the original mixture due to differences in their chemical nature. High selectivity allows you to reduce

the consumption of the extractant and conduct the process of liquid extraction more economically [3, с. 79-78; 4, с. 27-29; 5. с. 22-25].

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