

GREEN TECHNOLOGIES IN PHARMACEUTICAL PRODUCTION: OBTAINING OPTIMAL QUALITY OF PRODUCTS

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Using products on the basis of medicinal plants in prevention and/or therapy of certain diseases and medical conditions is becoming more and more widespread. For that reason, the necessity for further investigation in the field of obtaining natural products arises. However, traditional technologies mainly used in the production of natural products use organic solvents which are not safe for human health and the environment. In addition, classical methods of preparation of extracts quite often imply insufficiently used raw materials due to insufficient selectivity of solvents. This further results in low quality extracts in terms of yield and content of pharmacologically active substances. As a response to the need for production of natural preparations of optimal quality and ecological benefits, green innovative technologies have emerged which surmount the shortcomings of traditional methods for obtaining these products. These technologies include the possibility of procuring natural products of high quality, with a process which is environmentally safe and safe for human health. Depending on the type of material, chemical composition, desired pharmaceutical shape of the product, the appropriate technology of production is selected. Among the most common new technologies are extraction with fluids in supercritical and subcritical state, microwave, and ultrasound extraction. This study presents clear differences and principles of selecting the adequate technology for the production of preparations. Presented results of the research which include physical, chemical, and pharmacological characteristics of products obtained by using different green technologies, will be used to recognize the advantages and disadvantages of alternative technologies, and estimate the potential and validity of their implementation into the production of pharmaceutical products.

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