CREATION OF RESOURCE-SAVING EQUIPMENT FOR THE EXTRACTION OF PLANT RAW MATERIALS

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The article is devoted to a new approach to the issue of technical equipment for extracting valuable substances from plant raw materials and developing resource-saving equipment for its implementation. The role of equipment in the extraction of plant raw materials, as well as the types of constructions for modern extraction of plants for obtaining valuable substances from plant raw materials and the matters of their further improvement are described. The necessity of creating new industrial resource-saving extraction equipment with the purpose of increasing efficiency of obtaining valuable substances from vegetable raw materials is determined. The results of a patent search of the existing extraction equipment for the extraction of plant raw materials are presented and their essential shortcomings are described. A new design of an industrial plant for obtaining extracts from various types of plant raw materials and their further use was developed. The device of the developed plant for the extraction of plant raw materials and its operating principles are described. The developed plant can be used in the food, pharmaceutical and microbiological industries during the production of various valuable substances (starch, fiber, pectic substances and other dietary fibers), lipids, vitamins and other valuable substances in plant raw materials that require the transfer of a soluble substance to a solvent. The advantages of the proposed device for obtaining plant extracts are to facilitate its maintenance and ensure the continuity of operation, simplify the replacement of the stirring element, intensify the process of extracting valuable substances from various types of plant raw materials and reduce the working cycle, and reduce the resource costs.

Keywords: plant raw material, process, extraction, equipment, mixing, resource saving.