

STUDY OF OAK BARK'S TECHNOLOGICAL PROPERTIES AND THEIR INFLUENCE ON EXTRACTION

Hasan Farhat, Buryak M.V., Khokhlenkova N.V., Yarnykh T.G.

National University of Pharmacy, Kharkiv, Ukraine

marinaburjak@rambler.ru

Introduction. The bases of many medicinal herbal remedies are extracts of medicinal herbs. Given these considerations, the aim of our study was to conduct search and create thick oak bark extract - a new, standardized national substance of natural origin. Raw oak was largely seen as the source of tannins. Oak bark contains about 20% tannins, which include both condensed and hydrolysable tannins. Oak bark also contains organic acids, polysaccharides, proteins, flavonoids, micro-and macronutrients. Drugs from oak bark have astringent, anti-inflammatory, haemostatic and antiseptic effects. Oak bark decoction is used to treat inflammatory conditions of the mucous membranes of the mouth and upper respiratory tract. Also, it takes for internal application for treating diseases of the gastrointestinal tract, and inflammatory diseases of the genitourinary system. In the production of extracts basic technological operations are extracting the plant material. Improvement and intensification of production in order to increase the yield of the target product requires a detailed analysis of various factors that affect the extraction. Therefore, a process of extraction is necessary to consider the technological properties of herbal drug. The main technological properties of herbal drug include: moisture, content of extractives share, volume and bulk supply of raw materials, porosity, intercellular environment and free volume of layer materials, particle size and other plant material. The effectiveness of extraction of active substances is largely dependent on the nature of the plant material, the degree and method of grinding. We had been placed next task - to examine how the impact of grinding oak bark on its technological properties and efficiency of extraction of raw materials.

Materials and methods. To solve this problem oak bark crushed by different ways: cutting and machining of additional rolling. Prepared from these methods raw materials were evaluated by a number of process parameters.

Results and discussion. The present research has been indicate the basic technological properties of oak bark, which is composed of specific surface - $184,60 \pm 1,60\%$, bulk weight - $0,60 \pm 0,003\%$, porosity - $0,51 \pm 0,01\%$, intercellular environment - $0,34 \pm 0,01\%$, humidity - $8,47 \pm 0,12\%$. Determined that additional grinding bark oak rolling way possible to intensify the process of extracting and increase the quantity of extractives substances and tannins. All further shredded raw observed intensification of the extraction process and increases the quantity of extractive substances (from $10,23 \pm 0,20\%$ to $17,10 \pm 0,34\%$), tannins in recalculate from pirogalol (from $2,92 \pm 0,04\%$ to $4,49 \pm 0,06\%$).

Conclusion. As a result, studies proved the feasibility of using additional rolling at the stage of raw mill and studied technological parameters of oak bark, which we will take into account when choosing a method of extraction, extraction equipment, technical specifications and additional equipment.