STUDY OF DRY FRUITS AND VEGETABLES POMACE IN A VIBRATING VACUUM DRYER

V. Mykhailov, O. Mayak, A. Sardarov, G. Shershnev

In the article new low-waste energy saving ways of production of partite concentrates on the basis of fruit and vegetable raw materials are considered. The offered way of production of partite concentrates assumes the following basic technological processes: refinement of fruit and vegetable raw materials, equation in vacuo and vacuum drying. For the intensification of the drying process, residue vibration application is offered. Use of vibration in the course of drying, namely low-frequency fluctuations, allows to create a vibroboiling bed that intensifies the process of dispersible materials drying, solutions and suspensions due to the improvement of conditions of heat exchange between a heat carrier and a product. Namely it renders assistance to updating of a mass-exchanged surface of phases contact. Low-frequency processing of dispersible material sets it in an oscillating motion, at the same time forces of interaction between particles are considerably weakened: a sliding friction decreases, and the influence forces of the adhesion forces bond decreases. Depending on parameters of vibration and the nature of material vibration processing can render assistance to consolidation of particles, i.e. decrease porosity of a material. In the article the design of a vibration vacuum drier for drying vegetable raw materials is considered. The vibration Reynolds criterion of Rev, the analysis of which allowed to define rational modes of vibroprocessing of a residue was calculated. Experiments showed that application of vibration reduces drying process duration, and also promotes upgrade of a finished stock.

Keywords: concentrated products, fruit and vegetable raw materials, vibration, drying.