PHYSICAL PROPERTIES OF GRAPE SEEDS

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Introduction. Grape berries, depending on the variety and place of cultivation, contains from 2 to 5% of seeds. After squeezing the juice, the pomace contains up to 25% of the seeds. Grape seeds are a valuable waste of winemaking, suitable for the production of grape oil and enotanine. Review of the literature has revealed that the physical properties of grape seeds have not been studied. The aim of this study was to investigate some physical properties of grape seeds of three varieties. The technological properties of grape seeds, as an oilseed raw material, are determined by the physic-mechanical, physic-chemical and chemical composition, which are important in developing the technology for obtaining oil and extracts, as well as in justifying the choice and requirements for the creation of technological equipment.

When preparing grape seeds for extraction, it is important to determine their structural characteristics: geometric shape, linear dimensions, weight 1000 pcs. seeds, absolute weight, specific gravity, density, bulk density and other properties.

Material and methods. The material of the research was the seeds of grapes of the Moldova, Cricova negru and Muscat varieties.

Introduction. Experimental studies were performed using standard methods for assessing the physical and mechanical characteristics of seeds. In the study of the basic physical properties of grape seeds, the linear dimensions, the number of seeds per 100 g of berries, the mass of 1000 seeds and the mass of individual achenes were studied. The arithmetic mean of three parallel experiments was taken as the mean measurement. Weighing was performed on a scale of RADWAG PS2100.R2 (Poland) with an accuracy of 0.01 g. The length, width and thickness of each grape achene were measured with an electronic caliper with an accuracy of 0.01 mm. The processing of research results was carried out using the methods of multifactorial and statistical analyzes using new versions of Microsoft and Excel computer programs.

Results. Most grape seeds are pear-shaped. The mass of 1000 seeds varies from 22.34 ± 0.26 g to 45.36 ± 0.54 g, the number of seeds in 100 g of berries was 2224-4460 pieces, depending on the variety.

Conclusions. The sizes of grape seeds of the studied varieties differ from each other, and the mass of seeds varies within wide limits. The seeds of the studied grape varieties belong to the elongated type of achene shape, since all three sizes differ from each other. Variable curves of the linear size distribution of grape seeds were constructed, which respects the law of normal distribution.

Keywords: *physical properties; mechanical properties, grape seeds; classification; grape*

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