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The Feasibility of Using Avocado Seeds as an Additional Source of Polysaccharides and Phenolic Compounds in Fruit Processing

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Background: *Persea americana* L. has become quite popular in food and cosmetic industries in Ukraine, due to its unique composition of biologically active substances. According to the data of analytical and information platforms the supply of this fruit increased more than eightfold compared to the last year in Ukraine [1]. The seeds are simply disposed of during manufacturing. In our work, we propose the use of avocado seeds as an additional source of starch.

Aim: To establish macro- and micromorphological features and determine the quantitative starch content of seeds of three avocado varieties.

Methods: Microscopic studies were carried by light microscopy method [2]. The quantitative starch content was determined by the gravimetric method [3].

Results: There are three types of avocados in Ukraine: Mexican, Guatemalan and West Indian. The seeds of the three varieties are conical, smooth, light brown, membranous with a pronounced network of veins. The seeds sizes vary from 3.7±0.68 cm in the Mexican variety to 5.6±0.56 cm in the West Indian variety, the Guatemalan variety – 5.0±0.5 cm. The seeds make up from 10 to 23% of the fruit weight. The shape of the cotyledon cells of the Mexican variety is elongated-round, starch grains are simple eccentric or concentric. The West Indian has an elongated rectangular shape, densely filled with simple grains. In Guatemalan, the cells are rhombic with simple eccentric starch grains. The starch content ranges from 19.32±0.85% in the West Indian, 19.93±0.44% in the Mexican and 20.03±0.78% in the Guatemalan variety.

Conclusion: It was found that the seeds of three avocado varieties differ in size, shape and volume fraction of the total fruit mass, type of starch grains and shape of cotyledon cells. The content of starch in *P. americana* seeds was from 19.32 to 20.03%, which will allow its use as an alternative source of starch.

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