

THE INFLUENCE OF BIOLOGICALLY ACTIVE SUBSTANCES FROM WALNUTS PELLICULA ON THE QUALITY OF KERNELS

Student: Anastasia PODREZ

Coordinating Professor: PhD Raisa DRUȚĂ, PhD Alexei BAERLE

*Faculty of Food Technology,
Technical University of Moldova, Chisinau, Moldova*

Abstract:

Walnuts are exposed to the risk of oxidative damage, during storage and transportation, this causes an external change. Walnuts become brown and bitter. Phenolic compounds that are contained in high amounts in the pellicle make these undesirable transformations.

The aim of this research was to extract the polyphenols and naphthoquinones from the pellicle of kernels, and to estimate the influence of extraction on the quality of walnuts.

Practical significance: Extraction of coloring and phenolic substances can improve the organoleptic characteristics of walnut kernels as raw materials. This will improve the quality and nutritional value of food products that are produced directly from the walnut kernel.

In this research were analyzed five types of walnuts, which were from different period of storage: Schroth 2017, Schroth 2018, Schroth 2019, whole nuts 2018 and whole nuts 2018 from which were extracted juglone. All the nuts were placed in a special solution (prepared from ethanol, Na₂CO₃ and polygalacturonase,) in which the extraction process started from the first minutes. After that it was recorded Spectra of strongly diluted extracts on a DR 5000 spectrophotometer in the range of 200...1000nm, using quartz cell with l =10mm. Finally, nuts were dried and sensory analyzed.

Conclusions: Electronic spectra demonstrated that during the storage of nuts, the content of the juglone in the pellicle of kernels increases a lot. Walnuts look lighter, more attractive and significantly enlarge in size after our research. Thus, the removal of juglone can greatly improve the appearance and taste of the nut kernels.

Key words: *juglone, organoleptic characteristics, oxidative damage, pellicle, storage, walnuts kernels.*