

## **EFFECT OF PECTIN EXTRACTED FROM APPLE POMACE ON THE QUALITY AND BIOLOGICAL VALUE OF FRUIT BARS**

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Apple pomace is an agro-industrial byproduct, being an important source of functional compounds, such as carbohydrates, dietary fibers, phenolic compounds, vitamins, minerals and others. Pectin derived from apple pomace is used in pharmaceutical, food technology, cosmetic and other industries, where it serves as biopolymers, preservatives, antioxidants, anticorrosive and protective agents for various surfaces. The aim of the research was to evaluate the effect of crude pectin extracted from apple pomace used as a binding and coating agent in the manufacture of fruit bars on their quality and biological value during 12-month storage. The fruit bars were prepared from chopped dried fruits (apples, cherries, plums and rosehip powder) and apple pectin solution, which was used as a binding and coating agent. Pectin obtained from Golden Delicious apple fruits was obtained by microwave extraction. The gloss fruit bars were packed in PA/PE (polyamide-polyethylene) vacuum bags and stored in the dark at room temperature for 360 days. The evaluation of the sensory characteristics, physicochemical indicators, microbiological stability, and biological value of the fruit bars was carried out every 3 months for a period of 12 months. The results show that the use of pectin positively influenced the external appearance, consistency, color, and flavor of the fruit bars. The comparison of the physicochemical indicators of the fruit bars, determined in the first and last storage days, showed that they correspond to the normative documents in force. At 360 days of storage, moisture loss was 21.3%, titratable acidity decreased by 0.29%, water activity decreased by 14%, and pH increased by 0.34 units. From a microbiological point of view, the reduction of moisture content and water activity, as well as the presence of the pectin protective layer and vacuum packaging stopped the development of microorganisms during storage. Pectin was also shown to have a stabilizing effect, helping to minimize the degradation process of bioactive compounds during storage. Thus, after one year of storage, the total content of polyphenols and flavonoids in the fruit bars decreased by 27.2% and 32.7%, respectively, and the DPPH antioxidant activity decreased by 19.0%. It was concluded that crude pectin, used in the formulation of fruit bars as a binder and coating agent, demonstrated the protective effect of the functional value of fruit bars stored for 12 months.

**Keywords:** apple pectin, dried fruits, biopolymer coating, fruit bars, biological value, quality.

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