

TOTAL CAROTENOID CONTENT EVALUATION OF FUNCTIONAL FOOD PRODUCTS WITH ROSEHIP POWDER (*ROSA CANINA*)

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In this paper, the antioxidant capacity and physico-chemical characteristics of lipid-soluble extracts of rose hips were evaluated. It was performed the analysis of the impact of biologically active compounds on the physico-chemical characteristics of oily extracts and the investigation of their oxidative stability. The results obtained by high performance analysis methods have allowed the argumentation of the importance of replacing synthetic antioxidant compounds with natural antioxidants in the process of producing food products with a high content of lipids.

The comparative analysis of the rose hip extract and the treated vegetable oil showed significant differences for several quality indices studied. The rose hip extract is characterized by lower peroxide values (1.86 ± 0.20 mEq O₂/kg) and acidity values (0.07 ± 0.001 KOH/g) compared to the values obtained for the treated vegetable oil samples. This may be explained by the antioxidant action of the biologically active compounds of the rose hip that contribute to the oxidative process slowdown.

Following the optimization of the extraction methods, it has been established that the extraction of a high content of biologically active liposoluble compounds can be carried out by ultrasonography at 45°C. The content of carotenoids extracted is 4.8 ± 0.12 mg/L and the ascorbic acid content is 12.00 ± 0.19 mg/L.

The antioxidant capacity of the rose extract compared to the treated oil sample and the content of the biologically active compounds - vitamin C, polyphenols, β-carotene were measured after 3 months of storage. The antioxidant action of the biologically active compounds, which essentially stagnate the oxidation of the oil, is argued.

This research demonstrates the possibility of using liposoluble extracts of rose hip in the production of high lipid content foods. Of particular interest, it is the opportunity to substitute synthetic antioxidants with natural ones obtained from indigenous horticultural sources in order to provide consumers with stable and safe food for consumption.

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