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EVOLUTION OF TOTAL CAROTENOID CONTENT IN FOOD PRODUCTS ENRICHED WITH ROSEHIP (ROSA CANINA) POWDER

Introduction. There is an increased interest for sources of natural antioxidants such as carotenoids in order to enrich food products to increase the product shelf life. The rosehip *(Rosa Canina)* berries are natural concentrate of vitamins (C, P, B1, B2, E, K), carotenoids, folic acid, volatile oil, etc. The aim of this study is to evaluate the total carotenoid content during storage of functional food products enriched with rosehip powder.

Materials and Methods. Rosehip berries (*Rosa Canina*) were harvested in the central area of Republic of Moldova, in 2018. The rosehip berries were air dried, then grounded and sieved. In order to determine the total carotenoid content a lipophilic extraction was performed. The extractions were carried out in deodorized refined sunflower oil (1 g vegetal material extracted in 15 ml of oil). The extractions were performed using stirring technique at 45°C temperature regimes. Before decanting, the extracts were centrifuged at 5000 rpm for 10 min. For the determination of the content of carotenoids, was measured the absorbance at wavelengths of 663 nm for chlorophyll a, 647 nm for chlorophyll b, 470 nm for β-carotene, 448 nm for lycopene and 452 nm for zeaxanthin [1], to 10 ml of extract *versus* the deodorized refined oil (blank).

Results and discussion. The main carotenoids are lycopene and β-carotene, which have bio-medicinal and nutraceutical benefits. Rosehips are widely spread in Moldova which can motivate its use in food industry. Total carotenoid content was determinated by UV-Vis spectrophotometric method. Results showed that the rosehip extract had the content of chlorophyll α 0,68 ±0,01 mg/L and chlorophyll β 1,39±0,02 mg/L, β-carotene17,18± 0,01 mg/L, lycopene 18,13±0,03 mg/L and zeaxanthin 18,02±0,02 mg/L. Rosehip extracts were stored for 3 months at +4 °C. According to bibliographic sources, the content of carotenoids decreases up to 40% if samples are stored in a refrigerator (+4 °C) [2]. Results showed that the rosehip extract the content of chlorophyll α 0,59 ±0,01 mg/L and chlorophyll β 1,22±0,02 mg/L, β-carotene 15,09± 0,01 mg/L, lycopene 16,05±0,03 mg/L and zeaxanthin 15,83±0,02 mg/L. The results of this study showed that storage terms and conditions affect carotenoid content in extracts and that the nutritional value depends on the storage time.

Conclusions. Therefore, evaluating the carotenoids content of functional products enriched with rosehip powder we can conclude that there is a high possibility to motivate the continuous use of this compounds in the production of functional food products. Also there are possibilities to replace synthetic additives with natural ones to offer to consumers high quality and safe for consumption food products.

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