

## EVALUATION OF ANTIOXIDANT ACTIVITY *IN VITRO* OF DONUTS ENRICHED WITH BERRY POWDER

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Nowadays fast food and products that require a short preparation time are more preferred. So the use of products with high nutritional value is becoming more and more important [1]. Thus, it was proposed to replace wheat flour with berry powder of sea buckthorn, hawthorn and rosehip in a ratio of 5 and 10%.

The evaluation of antioxidant activity following gastric digestion shows an essential increase for the enriched samples compared to control sample -  $19.08 \pm 0.70\%$ ; samples with rosehip powder -  $51.57 \pm 1.30\%$ ; sea buckthorn powder -  $50.26 \pm 1.30\%$ ; and hawthorn powder -  $36.45 \pm 1.30\%$ . The changes that occur during gastric digestion and the considerable increase in antioxidant activity for the samples enriched with berry powder are due to the bioactive compounds in the composition of the food matrix [2].

Following intestinal digestion phase the antioxidant activity shows an essential decrease for the samples enriched with berry powder compared to control sample whose values are: for control sample -  $16.58 \pm 0.80\%$ ; for samples with rosehip powder -  $25.15 \pm 0.80\%$ ; for seabuckthorn powder -  $21.84 \pm 0.80\%$  and hawthorn powder -  $23.16 \pm 0.80\%$ . A gradual decrease in antioxidant activity was observed after 2 hours of incubation both for the enriched samples and for the control sample due to changes in pH, from the acidic environment (gastric digestion) to the alkaline environment (intestinal digestion).

This can be explained by the low stability of the bioactive compounds in the conditions of the alkaline environment and the formation of metabolites that inhibit the antioxidant activity of the bioactive compounds in the analyzed samples.

Sea buckthorn, hawthorn and rosehip berries are characterized by a rich complex of bioactive compounds, the use of which in obtaining functional food products will slow down oxidative processes and ensure food with a longer shelf life.

**Keywords:** functional food, rosehip, hawthorn, sea buckthorn.

### References:

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