IN VITRO AND *IN VIVO* RESEARCHES OF THE IRON BIOAVAILABILITY IN FORTIFIED BAKERY PRODUCTS

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Abstract

During food fortification, processing and storage, numerous physical-chemical and enzymatic processes take place which may greatly influence biological value of these products. Hereby, elaboration of a technologic process of fabrication of fortified products should be based on a profound study of the evolution of these micronutrients during technological process as well as during consumption. The main object of the present study was the investigation of the influence of the bread making procedure on iron bioavailability in iron fortified bread. The enzymatic degradation of the phytates ($InsP_6$) was studied within gastro-intestinal digestion conditions in vitro. The study of iron bioavailability was performed in vivo on white laboratory rats. The study of the biochemical indices of the blood, collected from the laboratory animals, fed with fortified bread with 8 mg Fe/100 g product, made by the traditional method and by the lactic-acid fermentation method compared to the control group showed that iron intake plays conclusive role in animal nutrition. Thus, iron statute of both experimental groups, and especially the body iron reserve, was essentially improved compared to the control group.

Keywords: food fortification, iron bioavailability, bakery products, white laboratory rat, enzymatic degradation.

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