ASSESSMENT OF DIGESTION ON CONTENT OF NITROGEN COMPOUNDS AND AMINO ACIDS IN BUCKWHEAT GRAINS AND BY-PRODUCTS

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Buckwheat is widely used in Polish cuisine. Buckwheat grains are characterized by a significant mineral content, thiamin and protein-balanced amino acid composition. The aim of this study was to assess the impact of the digestive process of buckwheat groats and by-products under in vitro conditions on the content of nitrogen compounds as well as exo- and endogenous amino-acids. The material examined consisted of buckwheat grains (BG) Fagopyrum esculentum Moench varieties Kora, buckwheat groats (BGR), buckwheat bran (BB), and buckwheat hull (BH). Raw materials were subjected to digestion in vitro in a bioreactor SARTORIUS BIOSTAT B PLUS. Protein was determined by the Kjeldahl method in a Kjeltec Foss Tecator apparatus, and an analysis of amino acid composition of protein buckwheat grains was carried out using a device Amino Acid Analyzer T 339's Microtechna Praha. The digestion process influenced the increase in content of nitrogen compounds in almost all buckwheat products (from 24% - BG up to 105% - BGR), with the exception of buckwheat bran and hulls. Amino acid content in buckwheat products after digestion was varied and depended both on the type of amino acid as well as the type of product. The decreased arginine content in the digestive process in all buckwheat products, with the largest losses of this amino acid occurred in buckwheat grains (49%). Serine levels decreased after the digestive process among the essential amino acids, while alanine increased in all products.

Keywords: digestion in vitro, amino acids, buckwheat products.

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