



The Amino Acid Composition of Processed Meat Compared to Other Sources of Protein for Protein Quality Assessment

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Abstract

Introduction: Protein is considered the dietary component that evokes the widest array of complex debate. It is viewed as the most expensive component of any diet and is an essential ingredient forming part of a healthy balanced diet. The nutritional quality of food proteins varies, depending on the essential amino acid composition, digestibility, and absorption.

Methods: Seven commonly consumed processed meat products were procured through convenience sampling from at least four different, multinational, commercial retailers in Gauteng, South Africa. Samples were sent for moisture, protein and amino acid analyses. Protein quality was assessed using the Digestible Indispensable Amino Acid Score (DIAAS) and compared with other sources of protein such as meat, legumes and protein sport supplements.

Findings and Interpretations: The proteins from animal sources are most desirable since they meet human nutritional requirements. This is primarily due to the 'completeness' of proteins from these sources. Consumption of processed meat products must however be limited to not exceed recommended sodium intake levels. Most plant sources of protein are incomplete, lacking in at least one of the essential amino acids and contains antinutritional factors that inhibits absorption.

Conclusions: The ideal metric for protein quality assessment is the DIAAS. However, for practical and regulatory purposes at present, since true ileal digestibility values of individual amino acids are incomplete, the Codex Committee on Nutrition and Foods for Special Dietary Uses (CNFSDU) and the FAO Expert Working Group on Protein Quality recommends the use of PDCAAS for specific foods where the ileal digestibility values are lacking. There is a need to generate a robust, standardised data set on protein digestibility of foods and diets generally consumed. Of the legumes analysed dried Haricot beans and lentils had a PDCAAS value of 1 while dried split peas had a value of 0.92, canned chickpeas 0.96 and dried soy 0.6. All the meat samples had a PDCAAS value of 1.

Biography: Hettie Carina Schönfeldt

Professor Schönfeldt is an advocate for nutrition research, promoting excellence through the creation, translation and dissemination of science-based information into policies, programmes and training

programmes both nationally, and internationally. She publishes evidence on why country specific food composition data is essential to make it possible to interpret the dietary outcomes of countries. She serves as scientific advisor to AFROFOODS, a network on the African continent, forming part of IUNS/UNU/FAO INFOODS Task Force. She is a co- director of the African Research Universities Alliance (ARUA) Centre of Excellence in Food Security and holds a Department of Science and Innovation /National Research Foundation Research Chairs Initiative in Nutrition and Food Security.