



Determining the Amino Acid Content of Four Popular South African Potato Cultivars

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Abstract

There is an interest in the metabolic effect of specific individual dietary amino acids (AA), and for this reason it is important to have accurate information on the amount of digestible or bioavailable AA in foods. In dietary protein evaluation, dietary AA should be treated as individual nutrients and wherever possible data for digestible or bioavailable AA should be given in food tables on an individual AA basis.

Protein is considered the most important macronutrient in the diet because it provides both essential AA and is a source of energy. Potatoes are a concentrated source of carbohydrates as well as containing other macro and micronutrients that contribute to human and dietary health and may act as an alternative source of protein in the diet.

Towards investigating the protein quality and AA content of alternative sources of protein. Four cultivars that contribute to the largest market share in South Africa were chosen for this study. Mondial (55%) and Sifra (23%) were sourced from three different production regions in South Africa i.e. Free State, Limpopo and Sandveld, and were analysed as two composite samples respectively. The other cultivars Valor (6%) and BP1 (2%), were sourced from Limpopo. All tubers were cultivated according to common agricultural practices of each specific to each region. Three tubers were selected from each cultivar and analysed as a composite sample.

Protein content for these tubers varied between 1.65g/100g and 2.19g/100g. In order to draw conclusions from the AA data it was compared to the FAO/WHO Scoring Patterns for protein. There were significant differences in the AA content of different South African potato cultivars, likewise there were significant differences in the protein content of the different staple foods.

Even though potatoes are not typically considered a good dietary protein due to the low content, their unique AA composition renders it a complete protein that can contribute to dietary protein intake. Promoting the cultivation and production of potatoes with a high protein content can further encourage dietary changes to include foods that provide nutrients of high-quality that can significantly decrease the number of individuals consuming low-quality diets.

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.