Key to Abstract numbering
BIO/FST- Biological Sciences /Food Science and Technology
MAS/ES- Material Sciences and Environmental Sciences
ICT - Computer Sciences and Mathematics
POS- Poster Presentations
VIR – Virtual Presentations

BIO/FST 001

Nutritional Evaluation, With Emphasis On Protein Quality And Beta-carotene Contents, Of Maize-based Snack Enriched With African Yam Bean Seed Flour

Idowu, Atinuke Olamide
Department of Food Science and Technology, Mountain Top University, km 12, Lagos-Ibadan Expressway, Prayer City, Ogun State, Nigeria.
Email address: aoidowu@mtu.edu.ng or gb.tinu04@gmail.com.com
Mobile phone no: +234 803 452 5210

Maize-based snacks are deficient in protein and vitamin A which can be ameliorated by using value-added processes to incorporate appropriate food crops. After evaluation, maize variety containing carotenoid was chosen and enriched with African yam bean seed (nutrient-dense crop) flour (AYBSF) to produce snacks called *kokoro* by including AYBSF in the following percentage (0, 20, 30 and 40) using appropriate experimental design. Carotenoids contents, Trypsin Inhibitor Activity (TIA) and *in vivo* protein quality of the samples were determined. The carotenoids contents of the flour blends showed significant ($p<0.05$) decrease in lutein (7.20-5.11µg/g), zeaxanthin (10.36-6.06 µg/g), β-cryptoxanthin (1.83-1.13 µg/g), α-carotene (0.36-0.21 µg/g), and β-carotene (1.84-0.92 µg/g) as the percentage of AYBSF increased in the flour blend. There was no TIA detected in 100% maize flour, but TIA increased in the flour blends with increasing percentage of AYBSF which reduced significantly during the processing of the flour blends into *kokoro*. The result obtained for protein availability of the *kokoro* showed no significant ($p>0.05$) difference from the standard casein diet. Thus, enriching maize-based snack with AYBSF is a good prospect which could be used in advising nutritional program especially for school-aged children. Hence, *Kokoro* enriched with AYBSF could be preferred to the commonly-consumed carbohydrate-based snacks.

Keywords: Nutritional quality, *kokoro*, African yam bean seeds, maize, Trypsin inhibitor activity