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AGENDA AND BOOK OF ABSTRACTS

(P3.100) *Chemical composition and oxidative stability of an upgraded local cowpea snack for preventing malnutrition in young children and adult population in low-income countries*

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Background and objectives: "Akara Ogbomosho" is a snack that derives its name from an ancient town in Nigeria (Ogbomosho) where it is mainly produced and consumed. It is a highly nutritious product obtained from deep-fried cowpea paste; hence its ability to be used in preventing and combating malnutrition especially in climes where malnutrition is prevalent. According to FAO (2022), 149 million children globally under the age of 5 were stunted, 45 million were wasted and 37 million were overweight reflecting significant global challenges related to malnutrition in young children. Snacks contribute close to one-third of daily energy intake, with many consisting of energy dense and nutrient-poor foods. Snacks are less structured meals taken randomly in-between main meals and account for one-third of daily energy intake and the consumption of healthy snacks has not been consistent; with nutrient-poor and energy-dense snacks being is regarded as unhealthy which should be discouraged. This prompted the investigation into the utilization, biodiversity and nutritional status of snacks developed from cowpea with the aim of providing replicable data. The principal objective assesses and standardize the indigenous technology for production of deep-fried cowpea snacks giving it a wider utilization and acceptability.

Methods: This study used white varieties of cowpea which was dehulled, milled into paste and deep-fried into shelf-stable nutritious product. The resulting product was analysed for its nutritional and elemental composition and oxidative tests. Analyses were carried out using AOAC, 2006 methods and results were subjected to statistical analysis using T-test and Duncan.

Results: The developed cowpea snack yielded a protein content of 26%, fat content of 8.63% and 3.02% fibre. These values are higher than conventional snacks which are currently available on shelf thereby making snacks from cowpea healthier in terms of nutrient it supplies. The mineral contents were Magnesium 62.42mg/100g, calcium 47.91mg/100g, phosphorous 69.42mg/100g, zinc 7.62mg/100g and iron 12.36mg/100g.Oxidative tests showed FFA value of 1.35 which is lower than the recommended value of 2 for FFA, high FFA values implies low oxidative stability, increase in acidity and development of off-flavour in foods. The PV of the snack was 6.74meqO2/kg, lower than the acceptable limit of 10 - 20 meqO2/kg, values above the acceptable limit shows high level of primary oxidation in the oils used for deep frying.

Conclusions: The study demonstrated the potential utilization of developed nutritious and healthy cowpea snacks for prevention and management of protein energy and micronutrient malnutrition among children based on the RDA

Keywords: cowpea, snack, malnutrition, oxidative, composition