

ABSTRACT

Malnutrition is still endemic in many parts of Africa, with contribution factors including underutilization of locally available crops and Porridge, which is a staple food in sub-Saharan Africa, but due to its bulk nature, infants are frequently fed on watery gruels with low nutrient density for easy palatability. Therefore, there is need to reduce food bulk for infants and combine locally available crops to enhance the nutritional intake. In this study, Sorghum malt commonly used in formulation of weaning foods, were combined with maize and soya beans, to make composite flours at ratios of 55:30:15 for composite flour A (CFA), 50:30:20 for composite flour B (CFB), 45:30:25 for composite flour C (CFC) and 40:30:30 for composite flour D (CFD) respectively. The sorghum used was malted for nine days and soya beans were roasted for 20 minutes at 100 °C. Physical and Chemical properties of composite flours CFA, CFB, CFC and CFD were analysed for proximate content, phytate, condensed tannins, total phenolics, density, viscosity and pH. The General Linear Model (GLM) of statistical Analysis System has been used to analyse the data and means separated using Tukey's honest significance at $p \leq 0.05$. For proximate, CFD had the highest ash 2.59%, Fat 9.96%, protein 20.17% and crude fibre 4.8%. However, for carbohydrate, CFA had the highest at 72.02% while CFD was 62.74%. Phytate content of the composite flours ranged CFA, CFB, CFC and CFD was 7.883mg/g, 8.5mg/g, 8.833mg/g and 9.5mg/g respectively. Condensed tannins were 3.283-2.499 mgCE/g decreasing from CFA to CFD. Total phenolics ranged from 1.898-2.778mg TAE/g in the composite flours. The density ranged in 0.805-0.859, viscosity increased from CFA to CFD and the pH ranged from 6.08-6.23. Malting sorghum for nine days showed a significant decrease in phytate and total phenolics, fat, ash and density, and an increase in protein and crude fibre. This showed that using sorghum malt, maize and soya beans can provide composite porridge flour with high nutritional values.