ABSTRACT

African locust bean and African oil bean are widely consumed when processed into various forms. The raw and fermented African locust bean and African oil bean were analyzed for their proximate composition, mineral content, anti-nutritional properties, functional properties and amino acid profile using standard methods. The result showed that the fermented African locust bean had the highest moisture and crude protein content of 8.71±0.2% and 49.00±0.3% respectively; raw African locust bean had the highest total ash and carbohydrate content of 7.29±0.1% and 27.65±0.3% respectively. The higher crude fat and crude fibre recorded in fermented African oil bean was 38.50±0.3% and 3.60±0.3± respectively. Anti-nutrient content was higher in raw samples than fermented one, phytate and oxalate was 2.49±0.2mg/g and 3.37±0.3mg/g for raw African oil bean respectively and 2.27±0.3mg/g and 1.89±0.1mg/g for raw African locust bean. Fermented African oil bean and African locust bean was 2.17±03mg/g and 2.94±0.2mg/g and 0.93±0.1mg/g and 1/35±0.2mg/g for phytate and oxalate. The results of functional properties showed that OAC and EC were 230.00±04%, 150.00±0.3%, 300.00±0.4%, 280±0.2% and 57.20±0.3%, 52.82±0.2%, 65.49±0.3%, 63.72±0.4% for raw RAOB, FAOB, RALB and FALB respectively. The mineral content showed that potassium and phosphorus was abundant in African oil bean and African locust bean. The total amino acids for raw African locust bean and fermented African locust bean was 97.89 and 101.35g/100g crude proteins respectively, while raw African oil bean and fermented African bean was 59.49 and 61.03 g/100g crude protein respectively. Essential amino acid was higher in African locust bean than African oil bean, fermented African locust bean was 53.55g/100g crude protein and fermented African oil bean was 35.32g/100g crude protein when raw African locust bean and raw African oil bean was 54.06g/100g crude protein and 32.83g/100g crude protein respectively. Non-essential amino acids were 26.66g/100g crude protein.
protein, 25.71g/100g crude protein, 43.83g/100g crude protein and 47.80g/100g crude protein for raw African oil bean, fermented African oil bean, raw African locust bean and fermented African locust bean respectively.

Fermentation processes involved in processing of African locust bean and African oil bean help to improve the nutritional and reduced anti-nutritional properties. The fermented African locust bean and African oil bean are good source of protein due to high protein content recorded in this study. Mineral compositions of fermented samples are good compliment for a good diet and the functional property OAC and EC are not significantly affected.