BIOLOGICAL EVALUATION OF SOME SEAFOODS AND SEAFOOD WASTES CONSUMED BY THE RIVERINE POPULATION OF SOUTH-EASTERN NIGERIA

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ABSTRACT

The nutritive value of some seafood; periwinkle (Tympanotomus spp), clam (Galatea paradoxa) and seafood wastes: Shrimps (Palamonetes varians) wastes and dusts consumed by the riverine population of South-Eastern Nigeria were evaluated by in vivo studies using rats. Proximate analysis varied significantly (p<0.005) among the different samples. Crude protein ranged from 44.87% in oven-dried periwinkle to 57.31% in oven-dried clam. Either extracts varied from 6.80% in smoked shrimp (crayfish) dust to 14.00% in oven-dried periwinkle. Crude fibre varied from 0.15% in oven-dried clam to 10.60% in shrimp wastes. Total ash varied from 3.50% in smoked clam to 35.50% in smoked-shrimp dust and nitrogen free extracts ranged from 1.25% in shrimp wastes to 28.94% in oven-dried clam. Metabolizable energy varied from 2.51 Kca/g in smoked shrimp dust to 3.98Kcal/g in smoked clam. Weight gains of rats fed the various seafoods and seafood wastes were significantly different (p<0.05). While rats on all other diets gained weight, those fed oven-dried periwinkle diet lost weight; a condition which was due to very low protein intake. Similarly, the protein efficiency ratio, net protein utilization, and protein retention efficiency of the periwinkle diets were negative. The apparent and true digestibilities were high for all the test diets. Also, the biological value for the various samples were high (83.19-88.39%), except for periwinkle, which was significantly (p<0.005) lower than others. The net protein utilization for all the diets was high and compared favourably with the casein diet. It was therefore concluded that the various seafoods and seafood wastes were of the right nutritional quality to meet the dietary requirements of man and farm animals.

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