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NUTRITIONAL PERFORMANCE OF FOOD REGIMES BASED ON LOCAL PRODUCTS IN THE REHABILITATION OF UNDERFED RATS

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Introduction: Specialized food products (SFP) such as PlumpyNut, Sup Plumpy and Corn Soya Blend are unequally distributed in areas with high prevalence of malnutrition in Ivory Coast. Services providing these products often experience shortages that not only endanger children who are undergoing nutritional treatment and especially those who should have access to them. One of the reasons for these breaks is the shortage of the raw materials necessary for the manufacture of these products. The diversification of these raw materials is therefore a way to explore. This study aims to evaluate the nutritional performance of diets based on local products in the nutritional management of malnourished rats.

Material and methods: The experiment was carried out in two stages: Rats are fed for 10 days with the "Anagobaka" to induce malnutrition. The nutritional rehabilitation of the malnourished rats was then carried out, for 21 days, with different regimes: Plumpynut control, Soybean maize (SOMA), Rice fish (POIRI), Pistachio rice (PIRI), Cowpea soybean millet (NISOMI), Cowpea soybean sorghum (NISOSO). At the end of the experiment, dry matter intake (DMI), total intake protein (TIP), weight gain (WG), Food Efficiency Factor (FEF) and protein coefficient of the different regimes are determined and compared with one another.

Results: The MSI of the diets varied between 7.01 ± 0.93 and 5.45 ± 0.16 g/d. The highest MSI value was observed in SOMA and the lowest in PIRI. No significant difference ($p>0.05$) was observed between POIRI, PIRI, NISOSO, NISOMI and plumpynut for MSI. Protein ingestion levels of SOMA, POIRI, NISOSO, control, NISOMI and PIRI ranged from 1.04 ± 0.43 to 0.83 ± 0.2 g/d. The control diets, POIRI, NISOSO, NISOMI and PIRI showed no significant difference ($p>0.05$). The malnourished rats submitted to the different rehabilitation regimes have all regained weight. The growth performances of the registered SOMA, POIRI, Control, PIRI, NISOMI and NISOSO regimes were respectively 2.82, 0.73 g/d; 2.69, 70.85 g/day; 2.64 ± 0.61 g/d; 2.03 ± 0.48 g/d; 1.99 ± 0.72 g/d and 1.89 ± 0.29 g/d. The mean weight gain of the diets showed no significant difference compared to the control ($p>0.05$). The Food Efficiency Factor for diets varied between 0.45 ± 0.05 and 0.33 ± 0.06 while PEs ranged from 2.90 ± 0.11 to 2.05 ± 0.39. The control diets, POIRI and SOMA showed no significant difference for the FEF and for the PEC ($p>0.05$).

Conclusion: The DMI, TPI, WG, FEF and PEC have allowed the evaluation of the growth performance of malnourished rats under different regimes. The results indicate that experimental diets have similar or even better performances than plumpynut. The most efficient regime is soybean maize (SOMA). Further studies are needed to verify whether the consumption of these diets has no pathological consequences for the regulating organs of nutrition.

Biography

Egnon k.v. Kouakou is a Nutritionist-Researcher in Nutrition/Health at University Felix Houphouet Boigny Abidjan Ivory Coast. He is an expert Consultant Trainer at the Ministry of Health and Public Hygiene of Ivory Coast. He is an author of 8 articles, 3 communications and a book in Nutrition/Health (Title: Weaning flour and malnutrition in Developing Countries published in European Academic Editions online on AMAZON), corrector of articles at science PG group (Issue Malnutrition in Developing Countries).

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