Adding Enriched Eggs in Cashew or Cocoa based Ready-to-use foods Improve Recovery Rate in Malnourished Rats

Abstract

Ready-to-use foods (RUFs) using indigenous sources in developing countries is highly required to treat moderate acute malnutrition (MAM). However, incorporating an animal protein may affect their effectiveness. Thus, four local RUFs based on Cashew nut (LF-1 and LF-2) or Cocoa beans (LF-3 and LF-4) were produced without (LF-1 and LF-3) and with eggs (LF-2 and LF-4). The objective of this study was to assess and compare to *Plumpy'Sup* (PS), the impact of adding enriched eggs in local RUFs on the proximate composition, growth and blood biochemical parameters in malnourished *Wistar* rats by *Anagobaka* diet.

Proximate composition revealed that, with the exception of fiber and ash contents, the four RUFs recorded protein, lipid, carbohydrate and energy values globally comparable to PS. They also met WFP's recommendations for foods to treat MAM. Results of growth parameters show that *Anagobaka* diet leads to the installation of a moderate emaciation, confirmed by an average weight loss of -17 %. Moreover, recovery diets showed higher weight gain and good palatability (DMI, TPI, FER and PER) in rats fed with PS followed by those fed with LF-2 and LF-4. For the serum biochemical parameters, the rats fed with LF-2 and LF-4 had on the whole a better functioning of blood metabolites (glucose, total proteins, albumin, urea, creatinine, ASAT, ALAT) as well as a better accumulation of blood lipids (total cholesterol, HDL-cholesterol, LDL-cholesterol and triglycerides) than those of rats fed with PS, LF-1 and LF-3.

In conclusion, RUFs which include enriched eggs will present the best nutritional profile to treat MAM but to sustain recovery a mineral supplementation will be needed.

Keywords: enriched egg, ready-to-use foods, moderate acute malnutrition, cashew nut, cocoa beans, *Wistar* rats and *Anagobaka*