Design of humanitarian ration formulations with high energy and nutrient density for crisis relief

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ABSTRACT

BACKGROUNDANDAIM: High-quality relief food products in the early stages of emergency for refugees and displaced persons must necessarily be prepared to minimize the mortality rate of people affected by disasters. The purpose of this study was to design a high-energy and nutrient-dense emergency food product (EFP) formulation.

RESULTS: This study utilized soybean flour and milk protein concentrate (MPC) as protein sources, corn flour and sugar as carbohydrate sources, and cacao butter substitute (CBS) as lipidsource. We followed the Institute of Medicine (IOM) guidelines and criteria for prototype food product. The macronutrient composition, calorie content, water activity, sensory properties, microbial and chemical tests of the designed formulation were on the basis of the IOM standards.

CONCLUSION: Since nutritional requirements are of the most essential human needs,especially in crises and warfare,producing high-energy and nutrient-dense EFP, meeting all human nutritional needs and providing easy use are of great significance and should be included into the agenda of national authorities, particularly in the crisis management.

Keywords: Nutrition, Emergency Food Product; High Energy, Nutrient Density, Crisis Relief

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