

Standardization of Ready-to-use Therapeutic Food from Locally Available Food Ingredients in Gujarat, India

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Background

Malnutrition is associated with high morbidity and death in children under the age of five. A large child population is suffering from severe acute malnutrition (SAM) and it is not possible to admit every child for treatment in hospitals. SAM may be treated simply by providing calorie-dense, protein-rich, vitamin- and mineral-fortified meals at home. In India, there are 132 million children under the age of five, and 8 million of them are affected by malnutrition. As a result, there is a demand for locally made ready-to-use therapeutic food (RUTF) comparable to WHO-recommended RUTF, which should be efficient, safe, and easily accessible.

Objective

The aim of this study was to develop a RUTF from locally available raw materials, such as barley flour, ghee, peanut, sugar, and flaxseeds.

Methods

For the development of optimized RUTF, an I-Optimal mixture design with three variable and three non-variable factors was used. Thirty semi-trained panelists participated in sensory analysis. The finally optimized RUTF (with high desirability) was further analyzed. The optimized RUTF composition included malted-roasted barley

flour (25 gm), roasted peanut (25 gm), powdered sugar (20 gm), desi ghee (20 gm), and roasted flax seeds (10 gm).

Results

The optimized RUTF (100gm) provided 522.72 ± 0.031 kcal total energy, and the protein-energy, fat-energy, and carbohydrate-energy ratio of RUTF were found to be 11.98%, 51.66%, and 37.45%, respectively.

Conclusion

The developed RUTF from locally produced is comparable to WHO-approved RUTFs.

Keywords: RUTF, optimal, malnutrition, therapeutic food, barley, peanut.