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| Nutritional Composition:  | NjuguYum | WHO Recommendations for RUTF |
| Energy | 544 kcal/96g | 520-550 kcal/100g  |
| Protein\* | 16.6g 12.2% of total energy | 10-12% total energy |
| Lipids\* | 32g 53% of total energy | 45-60% total energy |
| Sodium\* | 57mg/96g | 290mg/100g maximum |
| Calcium\* | 500mg/96MG | 300-600mg/100g |
| Potassium\* | 1115 mg/96g | 290mg/100g maximum |
| Phosphorous\* | 770mg/96g | 80-140mg/100g |
| Magnesium\* | 75mg/96g | 10-14 mg/100g |
| Iron | 7.8mg/96gm | 11-14mg/100g |
| Zinc | 6.4mg/96gm | 1.4-1.8 mg/100g |
| Copper | 860mcg/96gm | 20-40mcg (RDA is 340mcg for 1-3 years) |
| Iodine | 64mcg/96gm | 70-140mcg/100g |
| Vitamin A  | 2.4mg/96gm | 0.8-1.1mg/ 100gm  |
| Vitamin D Cholecalciferol (D3) | 8.55mcg/96gm | 15-20 mcg/100g |
| Vitamin E Tocopherol | 11.7mg/96gm | 20mg/100g minimum |
| Vitamin K Phytonadione | 34mcg/96gm | 15-30 mcg/100g |
| Vitamin B1 Thiamin | 0.64mg | 0.5mg/100g minimum |
| Vitamin B2 Riboflavin | 0.74mg | 1.6mg/100gm minimum |
| Vitamin C Ascorbic Acid | 25.8mg | 50mg/100gm minimum |
| Vitamin B6 Pyridoxin | 0.86mg | .6mg/100gm minimum |
| Vitamin B12 Cyanocobalamin | 2.54mcg | 1.6mcg/100gm minimum |
| Vitamin B9 Folic Acid  | 340mcg | 200mcg/100gm minimum |
| Vitamin B3 Niacin | 8.6mg | 5mg/100gm minimum |
| Vitamin B5 Pantothenic Acid | 4.36mg | 3mg/100gm minimum |
| Vitamin H Biotin  | 128mcg | 60mcg/100gm minimum |
| N6 Fatty acids | 3.6% of total energy | 3-10% of total energy |
| N3 Fatty acids | 3% of total energy | 0.3-2.5% of total energy |
| Selenium | 17mcg | N/A |
| Chromium | 14.94 | N/A |
| Molybdenum | 19.2mg | N/A |
| Manganese | 0.98mg | N/A |
| Sulfur\* | 120mg | N/A |
|  *There are a number of differences between the nutritious snack NjuguYum and WHO recommendations for RUTF:*  NjuguYum is designed to be a once or twice a day fortified snack for children and adults who are at risk of not consuming foods that contain a good balance of vitamins, minerals, protein, carbohydrates and fat. NjuguYum can be eaten wherever people eat food! NjuguYum contains all of the 21 essential micronutrients that are necessary to prevent anemia and immune deficiency, as well as to promote growth, intellectual, neurological and physical development, wound healing and metabolism for energy production. It also contains macronutrient marked with \*: minerals, fats and protein necessary for growth and metabolic processes. Severe catabolic illness, diarrhea, or malnutrition cause tissue breakdown and loss of macronutrients, especially phosphorous. If the sick person is re-fed without adequate balance of those macronutrients there is a risk of congestive heart failure, liver damage, seizures, coma and death. Avoiding deficiency of these nutrients before and after the child or adult is in a critical condition is crucial. Each serving of NjuguYum, for example, has the phosphorous content of two cups of milk, and high calcium, magnesium and potassium.  RUTF is food designed to treat severely acutely malnourished children in the ambulatory or inpatient medical setting. It is intended for short term treatment with 2-5 servings per day depending on child’s weight, and for a period of a few weeks to months while the situation is critical. RUTF has saved many children around the world. It is safe and effective, and has been a very important tool.  Why fortify? In vulnerable communities, nutritional deficiencies are rampant, and contribute to health problems including birth defects, infectious diseases and growth stunting. Even “Hidden Hunger” has consequences. Infants, young children, adolescents, women in childbearing years and other adults of all ages, but especially the sick and malnourished could reap many benefits from better access to fortified food. Advances in nutrition science have led to great improvements in public health: Iodized salt, Vitamin A&D fortified dairy products, B Vitamin fortification of flours and cereals, and Vitamin C in juices are good examples of successful food fortification interventions. NjuguYum was designed to be a delicious vehicle to deliver the results of multiple nutritional science breakthroughs to those who might otherwise miss the opportunity to enjoy the benefits of improved health and quality of life. NjuguYum is a fortified food, that could be available and affordable in the marketplace to help prevent common nutritional deficiencies, and to replenish deficiencies that are usually present, but often go undetected and untreated in resource-poor settings resulting in increased preventable morbidity and mortality. -PB 13 December 2021 |