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Formulation of nutrient rich food for the treatment of malnourished children

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Malnutrition affects million of people in developing countries; mostly it affects preschool-aged children and pregnant and lactating women. However government and international institutions have pursued a variety of intervention strategies in the hope of alleviation malnutrition, though it is insufficient, as the children from different region and various socioeconomic state need specific type of nutritional requirement. In the present study, we formulate the nutrient rich food which fulfills the requirement of malnourished children and pregnant women. Previous literature was searched to collect information for nutrient rich fruits, it is found that, pumpkin *(Cucurbita pepo)*, guava *(Psidium guajava)*, pomegranate *(Punicum granatum)* and banana *(Musa acuminatum)* have high nutrient values. Mixed fruit pulps of these fruits were analyzed for protein, dietary fibers, vitamins and iron. Using this pulp highly nutritive biscuits was prepared. It is then again analyzed for its nutrient content. The in vivo effects of these biscuits were checked in albino mouse or malnourished children. The parameters like serum electrolytes, serum protein, serum calcium, blood sugar, complete blood analysis were checked after every seven days for eight weeks of the children who have given the different weight of biscuit.

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Screening, optimization and production of exopolysaccharide from *Bacillus amyloliquefaciens*

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In this study, exopolysaccharide (EPS) producing ability of indigenous soil isolates was investigated. Out of these, higher EPS producing isolate was identified as *Bacillus amyloliquefaciens* by biochemical characterization & 16S rRNA sequencing. Taguchi experimental design was applied to optimize the fermentation conditions for EPS production by *Bacillus amyloliquefaciens*. Six factors viz. carbon, nitrogen, mineral source, P^H, temperature and period of incubation, each at five levels were selected and an orthogonal array layout of L25 (5^6) performed. The experimental result indicated that Lactose (3%), Yeast extract (0.5%), CaCl2 (0.15%), P^H (6.5) and Temperature (30^{o}C) are the optimized factors for EPS production under optimized one day period of incubation. Under these optimized conditions *Bacillus amyloliquefaciens* shows 464mg of exopolysaccharide production/liter.

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