Development and Evaluation of New Complementary Food from Maize, Soya Bean and Moringa for Young Children

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Abstract : The objective of this study was to develop new complementary food from maize, soybean and moringa for young children. The complementary foods were formulated with linear programming (LP Nutri-survey software) and Faffa (corn soya blend) use as control. Analysis were made for formulated blends and compared with the control and recommended daily intake (RDI). Three complementary foods composed of maize, soya bean, moringa and sugar with ratio of 65:20:15:0, 55:25:15:5 and 65:20:10:5 for blend 1, 2 and 3, respectively. The blends were formulated based on the protein, energy, mineral (iron, zinc an calcium) and vitamin (vitamin A and C) content of foods. The overall results indicated that nutrient content of faffa (control) was 16.32 % protein, 422.31 kcal energy, 64.47 mg calcium, 3.8 mg iron, 1.87mg zinc, 0.19 mg vitamin A and 1.19 vitamin C; blend 1 had 17.16 % protein, 429.84 kcal energy, 330.40 mg calcium, 6.19 mg iron, 1.62 mg zinc, 6.33 mg vitamin A and 4.05 mg vitamin C; blend 2 had 20.26 % protein, 418.79 kcal energy, 417.44 mg calcium, 9.26 mg iron, 2.16 mg zinc, 8.43 mg vitamin A and 4.19 mg vitamin C whereas blend 3 exhibited 16.44 % protein, 417.42 kcal energy, 242.4 mg calcium, 7.09 mg iron, 2.22 mg zinc, 3.69 mg vitamin A and 4.72 mg vitamin C, respectively. The difference was found between all means statically significance ($P < 0.05$). Sensory evaluation showed that the faffa control and blend 3 were preferred by semi-trained panelists. Blend 3 had better in terms of its mineral and vitamin content than FAFFA corn soya blend and comparable with WFP proprietary products CSB+, CSB++ and fulfills the WHO recommendation for protein, energy and calcium. The suggested formulation with Moringa powder can therefore be used as a complementary food to improve the nutritional status and also help solve problems associated with protein energy and micronutrient malnutrition for young children in developing countries, particularly in Ethiopia.

Keywords : corn soya blend, proximate composition, micronutrient, mineral chelating agents, complementary foods
Conference Title : ICGFS 2016 : 18th International Conference on Global Food Security
Conference Location : Singapore, SG
Conference Dates : January 07-08, 2016

International Science Index, Nutrition and Food Engineering Vol:3, No:1, 2016 waset.org/abstracts/44110