

Impact of soy laddoo supplementation on nutritional status of malnourished preschool children

N.S. GHATGE

Malnutrition is a global health issue. It imposes a toll on child mortality, 53 per cent of deaths in children under 5 years in age are due to nutrition related in worldwide. It may be due to the role of nutrients in disease and immunity. Supplementary feeding programmes are the emerging need in under nutrition for vulnerable segment in the population. Supplementary feeding must be the additional nutrients which are providing for the optional growth and desirable change in health status in particular. Hence, supplementary foods must be based on the formulation of the required nutrients for the treating of malnutrition, return the child to physiological, immunological and biochemical normality. The organoleptic qualities like taste, texture, flavour and over all acceptability of the soy laddoo was highly scored by the panel. The nutritional qualities likes major nutrients such as energy(470.0kcal), proteins (20.1 g) and fats (22.0 g) content were found more in soy laddoo. The micro nutrients such as iron (6.3 mg), zinc (3.8 mg) and calcium (286.5 mg) were also observed higher range in soy laddoo. It was also noted that there were very less antinutritional factors like phytate phosphorous (160mg), tannin (0.34 mg), trypsin inhibitor activity (5.5ml), acid detergent fiber (1.31g), cellulose (1.00g) and lignin (0.3ml). The *in vitro* digestibility of protein and per cent bioavailability of iron shown higher in soy laddoo. It showed better keeping qualities upto two months when stored in a tetra package at room temperature. Soy laddoo has also shown very low production cost. Hence, it was found very cheap and affordable to the below poverty line group of children. Significant improvements in nutrients intake, anthropometric measurements. The soy laddoo was given @ 50 g/child/day.

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INTRODUCTION

Soybean is an important source of quality legume protein and also oil seed crop in Maharashtra. Soybean is one of the nature's wonderful nutritional gifts. It is one of the few plants that provide complete proteins with minimum saturated fat. Regular consumption of soybean helps people feel better and live longer with enhances quality of life. Soybean contains all three macro nutrients required for good nutrition *i.e.* complete protein, carbohydrates, fat as well as vitamins and minerals including folic acid calcium, potassium and iron. Soybean protein provides all nine essential amino acids in the amount needed for human health. It is less expensive and hence used for formulation of high nutritious weaning, supplementary food

and snack food. Most of these studies (Sahay and Kacharu, 1988; Chandrashekhar and Hildo Sahay Rani, 2004; Deshpande *et al.*, 2004) recommended that soybean can be used for snack food as well as weaning food and supplementary food to combat the malnutrition and to maintain good health and good nutritional status of preschool children. With the intention of high significance nutritive value of soybean, it is most-familiar, and more popular in children.

Before conducting the supplementary feeding programme, the screening of malnutrition was monitored and evaluated by use of weight for age, weight for height and body mass index (BMI) of the preschool children. Moreover, on the basis of screening the grading of malnutrition in preschool children was calculated by taking into account the average values of the weight for age, weight for height and BMI of these children. The relevant data are presented in Table 1 and 2.

ADDRESS FOR CORRESPONDENCE

N.S. GHATGE, Trimurti Home Science College, Trimurti Nagar Newasa Phata, AHMEDNAGAR (M.S.) INDIA
E-mail: nalinihemangi26@rediffmail.com