

Formulation and nutritional evaluation of a food prepared with lotus (*Nelumbo nucifera*) seeds

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Lotus (*Nelumbo nucifera*) is an aquatic-sub merged, plant grown in Sri Lanka. This plant bears very attractive flowers, roots are edible and the seeds are rarely used at the moment but it is reported to have many medicinal and nutritional values. Lotus seeds are reported to be demulcent, diuretic, nutritious and are often used as an ingredient in food. Its hard seed coat is the main problem in processing this seed into a food.

Lotus seeds were analyzed for Carbohydrates, Protein, Ash, Crude Fat, Fibre, Minerals and Energy values. The significant features were the high protein content -20.43% which is comparable with the protein content of legumes. High levels of dietary fibre -33.4g (insoluble fibre -23.03 and soluble fibre -10.3) and minerals ie- phosphorous 744mg, calcium -278.5mg and iron -12.3mg.

A nutritious food was formulated with lotus seeds, milk powder and sugar which was given to school children of Uppalawatta Kanishta Vidyalaya, Anamaduwa. The composition of the food was; Lotus seeds 100g, milk powder 70g, sugar 80g, salt 0.5g. The significant features of the food was protein - 17.7%, total sugars - 37.6%, fat -3.1%, dietary fibre -20.7%, phosphorus 565mg, calcium -371.8mg and iron -7.4mg. This food was given to the children in the form of a porridge and the dosage was 70g (35g x 2) per day. Duration of trial was three months and the height, weight, arm circumference and BMI were measured for selected thirty children (Boys and girls of 5 - 10 years).

It was observed that the p-values of mean weight comparisons have been highly significant at 5% level and it indicates that students' weights were grown with time. Series of hypothesis tests (t-test for two paired samples) has been carried out to check whether there is a significant improvement of Anthropometric measurements/indices of children with the time. According to the p-values all the comparisons have been significant at 5% level. From these tests it can be concluded that the BMI values increase considerably with the time.

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