ABSTRACT

Formulation Of A Low Cost Nutritious Supplementary Food, Its Physiological As Well As Nutritional Evaluation On Experimental Animal And Its Sensory Evaluation Among The Human Subjects

In India, poverty and malnutrition are widespread even though various types of cheap, nutritious foodstuffs are abundantly available which are wasted by the common people due to ignorance. The current research is an effort to utilise these unconventional nutritious foodstuffs to develop a low-cost, nutritious supplementary product. In phase-I, three neglected, zero-cost foodstuffs namely cauliflower leaves, pumpkin seeds and eggshells were utilised along with some other cheap, nutritious foods and spices. The cost of the NDSP was calculated based on the market price of the ingredients used. It indicated that NDSP was a low-cost (Rs.7.81/100g) supplementary food. In phase-II, quantitative estimation of the nutrient contents of the newly developed supplementary product (NDSP) showed that it was a high-energy, high-protein food containing a moderate amount of fat, carbohydrate and fibre. NDSP was rich in calcium and iron, provided a substantial amount of zinc and magnesium. It had a good sodium-potassium ratio. In phase-III, the animal experiment showed that it was well accepted in rats and it could efficiently support growth. It improved both serum calcium and blood haemoglobin levels. It had a cholesterol-lowering effect. It had no adverse effect on the serum levels of triglycerides, glucose and protein. It did not affect the liver function. In phase-IV, nine different types of recipes were prepared by incorporating the NDSP and their acceptability was assessed by the sensory evaluation method using 5-point hedonic rating scale. Sensory evaluation revealed that all these recipes were well accepted by the human respondents, having acceptability scores from 3.31 to 4.30 out of 5. Inphase-V, the shelf-life of NDSP was assessed by measuring the change in moisture content and pH values of the product with a length of storage period. Shelf-life study indicated that NDSP had a good storage life. So, it may be concluded that the newly developed, low-cost, nutritious supplementary product (NDSP) can efficiently improve the nutritional status of the poor and nutrition-deprived segment of the population.

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