

Nutritional evaluation of a mixture powder (fruits, vegetables and pulses) for children as supplementary food

VINITA SINGH AND PRAGATIKA KATIYAR

Supplementary food was prepared by multipurpose flour or powder like carrot powder, papaya powder, black gram dhal, groundnut powder in the ratio of 10:10:60:15. This mixture powder was used for preparation of different food products such as matharies, puris, laddoos. Results showed that protein content was higher in matharies whereas, calcium and fat was found higher in puris. Hence, these supplementary foods powder may be used as high density, protein, vitamin and mineral supplement to overcome protein-energy malnutrition and vitamin deficiency diseases in infants.

Key Words : Mixture powder, Nutritional characteristics, Supplementary food

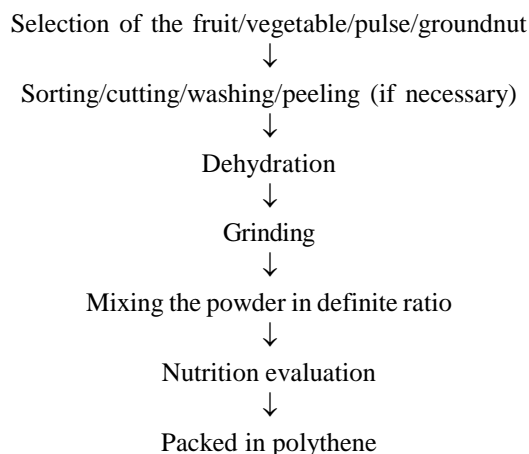
How to cite this article : Singh, Vinita and Katiyar, Pragatika (2014). Nutritional evaluation of a mixture powder (fruits, vegetables and pulses) for children as supplementary food. *Food Sci. Res. J.*, 5(1): 72-73.

Supplementation is also defined as a gradual transition of a baby food from semisolid to solid foods. However, tradition varies from country to country. Most popular supplementary foods are prepared by using multipurpose flour and milk powder, they contain sufficient vitamins namely, vitamin A,C,D, thiamine, riboflavin, nicotinic acid and minerals, for example calcium and iron. Supplementary foods are food for improving the nutritional status of children. Supplementation should be instituted to overcome malnutrition and related infection. Though a number of commercial formulae are available in the market, these are too expensive and not within the reach of very poor.

This experiment was conducted in the Dept. of Food Science and Nutrition, C.S. Azad University of Agriculture and Technology, Kanpur, during the period 2010-2011. Fresh ripe papaya and carrot were collected from market of Kanpur city. These products were taken for further investigation. The

undesirable parts were removed, sliced into very small pieces and powder was prepared by sun drying method at 70^o-80^o C for 15-18 hours.

Dehydrated fruits (papaya), dehydrated vegetable (carrot), roasted pulse (black gram dal), roasted groundnut were mixed in the ratio of 10:10:60:15 and this prepared mixture was analyzed for various nutritional constituents *i.e.* moisture, crude protein, total ash, extractible lipids and calcium.



MEMBERS OF RESEARCH FORUM

Author for correspondence :

VINITA SINGH, Department of Food and Nutrition, M.A.B. College of Home Science, C.S.A. University of Agriculture and Technology, KANPUR (U.P.) INDIA

Associate Authors' :

PRAGATIKA KATIYAR, Department of Food and Nutrition, M.A.B. College of Home Science, C.S.A. University of Agriculture and Technology, KANPUR (U.P.) INDIA

Nutritive value of mathari, puris and laddoos:

Table 1 shows that protein content was found significantly higher in laddoos (16.95%) as compared to puris (15.13%) and matharies (13.67%). A perusal of data presented in Table 1 indicates that the extractive content differed significantly in matharies, puris and laddoos prepared by different different methods. Matharies contained 78.42 per cent whereas puris contained 90.13 per cent and laddood contained higher fat 33.27 per cent. There was wide variations in the calcium content of the products such as matharies, puris and laddoos where as in the present study higher, difference was observed between these products, the mean values of puris (121.44 mg) was higher than laddoos and matharies (73.83mg and 61.64mg), respectively.

Data on total ash content of matharies, puris and laddoos

Table 1 : Mean and standard error of nutritive value of matharies, puris and laddoos (mixture powder) on sun dry matter basis

Sample	Protein (g)	Fat (g)	Calcium (mg)	Ash %	Moisture %
Matharis	13.67	78.42	61.64	1.02	20.5
Puris	15.13	90.13	121.44	2.62	19.98
Laddoos	16.95	33.27	73.83	1.46	19.27
S.E.±	0.03	0.24	0.53	0.01	0.57
C.D. (5%)	0.076	0.55	1.19	0.04	0.13

are presented in Table 1 which indicate that there was minute difference among these products, as the mean value for the matharies and laddoos were 1.02 per cent and 1.46 per cent, respectively, but puri had significantly higher ash content (2.62%). The moisture content differed marginally but significantly. Matharies had higher moisture content (20.05%) than the puris (19.98%) and laddoos (19.27%).

Conclusion:

It may be concluded that nutritional quality of mixture was good. The calcium present was found significant high in puris prepared by wheat flour mixed with mixture powder, and the protein per cent was found significantly high in laddoos which was prepared by wheat flours and mixture in the percent of 50. Since infants digestive system is not fully developed to digest food properly hence it may be conducted that the supplementary food prepared with carrot and pappya powder is best suitable for the infants.

LITERATURE CITED

- WHO/UNICEF (2010). Report of joint meeting on infant and young children feeding WHO Geneva, pp. 138-139.
- Weaver, L. (2009). Feeding the weaning in the developed world; problem and solution. *Internat. J. Food Sci. & Nutr.*, **45** (2) : 127-134.

Received : 09.07.2013; Accepted : 30.03.2014