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**Dr. Swati Sachan**  
 Assistant Professor, Institute of  
 Health Science C.S.J.M.  
 University, Kanpur, Uttar  
 Pradesh, India

## Nutritional composition and supplementary food of developed products for children

**Dr. Swati Sachan**

### Abstract

A child's entire life is determined to a great extent by the quality of food provided in its first year of life serious dietary deficiency in this period damages the health, inhibit the growth and physical strength and possibly retard mental development. Children in developed countries suffer from protein energy malnutrition. In the developing countries cereals constitutes the main source of protein which are themselves not only low in protein content but are also deficient in one or other essential amino acid, therefore, supplementation of legumes with cereals which only supplies adequate calories but also enrich its quality protein.

**Keywords:** Composition, supplementary, product

### Introduction

The supplementary foods are based on cereals like rice, wheat, ragi and corn, pulses like Bengal gram, horse gram, tur dhal, oilseed flour like groundnut, cotton seed, soybean, sesame and sun flower. 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. Formulated supplementary foods for older infants and young children means food suitable for use during the infants weaning period and for feeding young children as a supplement to breast milk or breast milk substitutes or other food available in the country where the product is solid.

### Objectives

1. To estimate the nutritional composition of developed products.
2. To study sensory characteristics of developed products by 9 point hedonic scale.

### Methodology

This study was conducted in Kanpur city. The study is laboratory work. All products were sun dried for nutritive value purpose. Nutritional analysis such as moisture content, ash, grade fed, crude protein etc. Prepare recipe for developed product after preparation. Sensory evaluation method used and statistical analysis ANOVA method were used.

### Results

**Table 1:** Mean and standard error of nutritive value of Matharis, Puris and Laddoos (mixture powder) sundry matter basis

Sample	Protein (g)	Fat (g)	Calcium (g)	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
SE (diff.)	0.03	0.24	0.53	0.01	0.57
CD (5%)	0.076	0.55	1.19	0.04	0.13

Matharis, puris and Laddoos were prepared by mixture powder and was prepared by sun drying method. Table indicates that Laddoos had significantly higher protein content (16.95%) than puris and matharis (15.13 and 13.67%). Calcium content in matharis and Laddoos differed significantly. Data on total ash content of matharis, pluris and Laddoos indicate that there was minute difference among these products, as the mean value for the matharis and

**Corresponding Author:**  
**Dr. Swati Sachan**  
 Assistant Professor, Institute of  
 Health Science C.S.J.M.  
 University, Kanpur, Uttar  
 Pradesh, India

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.

**Table 2:** Mean and standard error of organoleptic evaluation of sun dried tomato, spinach and mushroom powder soup

Sample	Appearance	Taste	Flavour	Texture	Overall acceptability
Matharis	8.2	9.0	7.8	8.2	7.8
Puris	8.4	8.0	8.2	8.2	8.4
Laddoos	7.8	8.2	8.4	8.4	8.4
SE (diff.)	0.54	0.16	0.48	0.48	0.41
CD (5%)	NS	0.35	NS	NS	NS

SE – Standard Error

CD – Critical Difference

NS – Non-significant

Organoleptic results showed that the mean value of Laddoos was 8.4 in flavour, while the mean score of puris was 8.2 and matharis obtained mean value 7.8 with critical difference of 5.0 per cent level which was non-significant. The texture of Laddoos was found non-significant at the 5.0 per cent level. Mean score of overall acceptability obtained by organoleptic evaluation was non-significant. Mean score of matharis was 7.8, whereas, for puris 8.4 and Laddoos were having mean value of 8.4.

### Conclusion

The study indicates that nutritional quality and organoleptic acceptability of mixture is good. The various parameters such as moisture, total ash, crude protein, crude fat, calcium were analyzed. The calcium per cent was found significantly 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 flour and mixture in 50.0 per cent. The supplementary food is incorporated with papaya powder because papaya, carrot is easily digestible, good source of  $\beta$  carotene, also contain enzymes which is used for digestion of protein, carbohydrate and fat. It also helps to regulate the abnormalities like constipation, diabetes, high blood pressure etc.

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