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A Comparative Study Of Proximate And Mineral Nutrients Composition Of Paediatric Food Supplements.

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ABSTRACT

Children in developing countries within complementary feeding window are challenged with nutrition related health problems predicated in part upon poor nutritional knowledge of caregivers. Cerelac is the best food for baby's because it has a lot of nutrients and minerals. These studies focused on analysis of different types of commercial cerelac powder, qualitatively and quantitatively of different parameters to find the healthiest among. Because of women prefer to give this product for children as food. This study focused on analysis of different physicochemical parameters like, pH (6.30, 6.56, 6.51), Electrical conductivity (515, 530, 652), Ash content % (15.02, 41.8, 21.06), and in the analysis of mineral composition the amount of minerals found (Na (0.12, 0.05, 0.15), K (5.005, 7.049, 3.9888), Fe (2.68, 2.28, 1.02), Ca (4.49, 5.169, 5.049), Zn (0.025, 0.020, 0.022) in three types of samples.

Keywords: Physicochemical parameters, Mineral composition, Proximate analysis, Cerelac.

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INTRODUCTION

Healthy infant nutrition involves exclusive breastfeeding for the first six months of age after which other foods should be introduced to the infant to complement breast milk. Complementary feeding therefore could be described as the processing of introducing other food to the infants to make up for the limitations in breast milk when breast milk alone is no longer sufficiently supportive in providing the nutrients required for optimum growth and development in the infant. To this end, it could be extrapolated that timing and content are essential to introducing other foods beside breast milk to the infant, if healthy infant nutrition is in view.

Cerelac is the best complimentary food for the baby above 6 months. After the child reaches the sixth month, the breast feeding become not enough meet the needs of his body to grow. So, cerelac can be the one to achieve all his mental and physical requirements. Cerelac support the baby with combined advantages of cerelac and milk. The best thing is that it is without the preservative, favors and artificial colors. Cerelac has 3 packs for example, rice, wheat, and wheat honey. It is the best food for the baby, it has smooth texture which makes easy to swallow. Complex carbohydrates are broken down into smaller also, it easier way to digest compound. It provides 18 important nutrients such as Protein, Calcium, Vitamin D, A and C, Iron, Zinc, and Omega 3 and 6.

MATERIALS AND METHODS

Analyses of Physicochemical Properties: The analyses involves the estimation of-moisture content, pH, electrical conductivity (EC), Ash content, Smell and Appearance of cerelac were carried out in the present study.

Determination of Mineral Elements: The elements were extracted from cerelac by the wet digest method. The digested sample was analyzed for the elemental composition using Atomic Absorption Spectrophotometer (AAS) and Flame Emission Spectrophotometer (FES). Zn, Fe, Mn,Cu, Mg, Na, K and Ca were determined and the concentrations of the elements were presented in mg/L.

RESULTS AND DISCUSSION

The results of the Physicochemical Properties and Mineral Composition are presented in Table 1.

Table 1: Physico chemical evaluation & Mineral composition

Name of samples	Sample-I	Sample-II	Sample-III
pH	6.30	6.56	6.51
Electrical Conductivity(μ s/cm)	515	530	652
Amount of Iron (ppm)	2.68	2.68	1.02
Amount of Sodium (ppm)	0.1	0.05	0.15
Amount of Sucrose (mg)	0.0192	0.0115	0.0192
Amount of Ash (%)	15.02	41.8	21.6
Amount of Calcium(ppm)	4.490	5.169	5.049
Amount of Potassium(ppm)	5.005	7.049	3.988
Amount of Zinc (ppm)	0.0225	0.0200	0.0200
Amount of Vitamin C (mg)	0.03	0.018	0.018

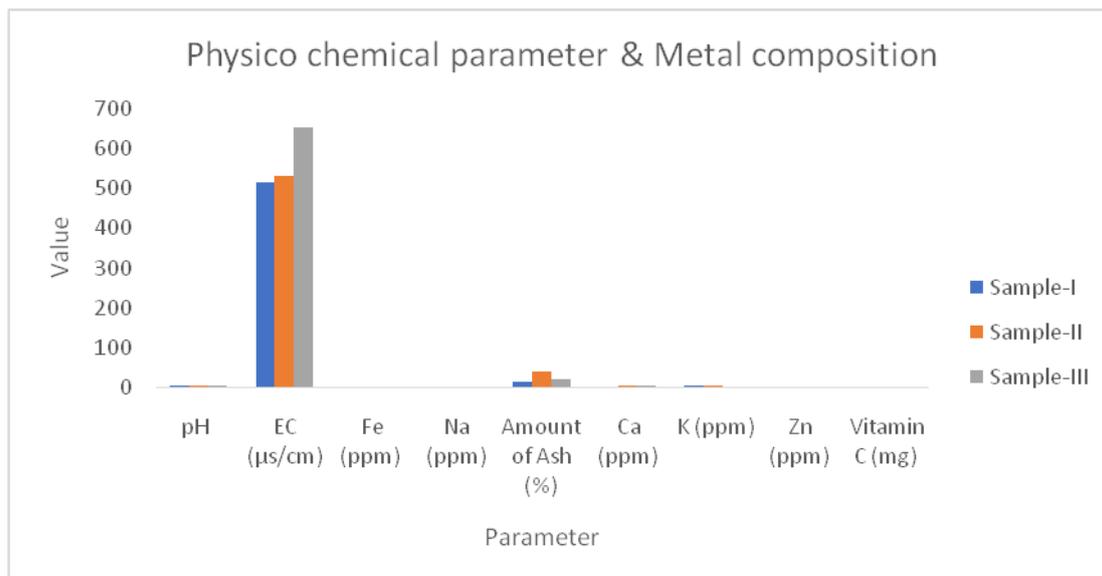


Figure: Physico chemical parameters & Metal composition

Author’s contribution statement: Gopala Krishna Devisetty Planned entire study, designed the analysis and wrote the paper, Afaf Al-Ajmi, Zuwaina Al-Zurtmanie, Rehab al Siyabi collected the data and performed the analysis.

Statistical analysis: The analysis of variance of the data obtained was done by using completely randomized design (CRD) for different studies. The analysis of variance revealed at significance of $P < 0.05$ level is mentioned wherever required.

CONCLUSION

Macro and Micro nutrients play a vital role in maintain normal and metabolism across individuals. Children who are in the growing age require a substantial amount of nutrients. In this direction this study included study of various Food supplements (Cerelac) that have occupied the market and are potential source for minerals like iron, sodium, potassium and calcium because the concentrations of these elements in food supplements meets the needs and requirements of the body.

From the result obtained as presented and discussed above, it could also be concluded that the three complementary food types studied have the potentials to singularly provide healthy amounts of different nutrients physiologically needful for infant growth and development, in good matrices respectively.

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