



Determination of Zinc in Some Infants and Young Children Foods Available in Bahir Dar Supermarkets and Pharmacies Using Atomic Absorption Spectroscopy

Girma Kibatu Berihie, PhD

Biological Inorganic Chemistry, Bahir Dar University

Abstract

This study was to done to determine the total content of zinc in some children's complementary foods available in supermarkets using wet-digestion method by flame atomic absorption spectroscopy (FAAS). The content of Zn in the infant formulas ranged from 0.768 ± 0.843 mg/kg to 47.743 ± 0.816 mg/kg and follows the order: Cerifam > S-26 > Cerelac-2 > Cerelac-1 > SUN > Mother's Choice > Promil > Baby King > Couscous > Safa.

Introduction

Breast food is the best food a baby needs during first 4 to 6 months of life. However, complementary nutrient-dense foods are also required to cover their additional micronutrient requirements, notably zinc, iron, calcium, and vitamin A after 6 months of age.

Objective

The aim of this study was to determine the zinc content of some infants and young children complimentary foods and supplementations available in Bahir Dar supermarkets and pharmacies.

Methods

1.0 g of 10 different food samples were digested by wet ashing method and the content of zinc in each food type were determined using flame atomic absorption spectroscopy.

Chemicals and reagents: HNO₃ (69%), H₂O₂ (35.1%), Zn (NO₃)₂; and deionized water.

Equipments: Oven (J. P. Select, Spain), NOV FAAS 300 (Analytic Jena, Germany)

Results

The results indicated that the infant formulas have variable levels of Zinc; except for Couscous and Safa, others have appeared to likely contain adequate amount of zinc based on the general infants and young children dietary zinc requirements (6-12 mg/day).

Conclusion

Prevention control and elimination of micronutrient deficiency disorders can be achieved through proactive integrated research between Science, Agriculture, Engineering, Medicine and Health Sciences in: Assessment of micronutrient status in our foods and environment; and through food diversification, supplementation, fortification and biofortification.

Figure 1 Zinc Content in mg/Kg



Acknowledgement

Bahir Dar University
Yasin Adem; Mulatu Shawl and Liboro Hundito
Contact:
girmakibatuberihie@gmail.com

