

BOOK OF ABSTRACTS



FOOD QUALITY & SAFETY,  
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NUTRICON

# DETERMINATION OF ZINC AND COOPER IN INFANT FORMULA AT MONTENEGRIN MARKET BY ICP-OES

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## Abstract

Human milk is the best dietary choice for infants. When breast-feeding is not possible and/or not adequate, commercially available infant formulas provide a suitable alternative. Infant formula is "a food which purports to be or is represented for special dietary use solely as a food for infants by reason of its simulation of human milk or its suitability as a complete or partial substitute for human milk". Infant and children are very susceptible and vulnerable to the whole amount of foods elements, and their effects on health. Zinc and copper are two essential elements in human body. They regulate many metabolically reactions and participate in enzymatic processes. The aim of this paper was to determine zinc and copper in infant formula on the Montenegrin market.

Milk powder samples were taken in February 2014. Infant formula powdered samples for infant aged 1 - 6 months from the market and certified reference material (CRM) were prepared in a same way. Sample preparation was performed in accordance with new validated method (water dilution of milk powder in ratio 1 : 100). Zinc and copper content was determined by Induced Coupled Plasma Optical Emission Spectrometry (ICP-OES). Limit of quantification (LoQ) for Zn and Cu was 5 µg L<sup>-1</sup>. Recovery for Zn was 90 - 98% and for Cu 90 - 103%.

Content of Zn ranged between 3.48 ± 0.3 to 4.75 ± 0.4 mg/100g of powder and for Cu from 0.26 ± 0.05 to 0.38 ± 0.05 mg/100g of powder. All analyzed infant formula satisfied labeled concentration of Zn and Cu.

Based on the obtained results it can be concluded that all powder milk samples on the Montenegrin market are safe for infant consumption.

**Key words:** *Infant formula, Zinc, Copper, ICP-OES.*