Química, análise de alimentos e análise sensorial

# XXII CONGRESSO BRASILEIRO
## DE CIÊNCIA E TECNOLOGIA DE ALIMENTOS
### POTENCIALIDADES, DESAFIOS E INOVAÇÕES

**07 a 10**
Novembro - 2010

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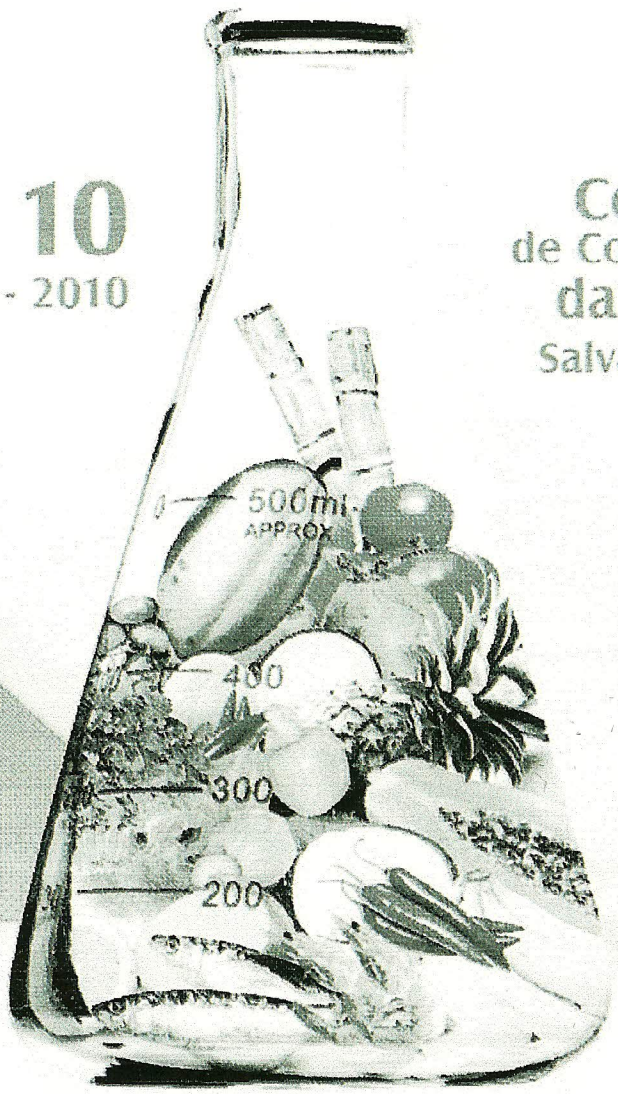


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# ESSENTIAL ELEMENTS IN COW MILK AND SOY-BASED INFANT FORMULAS DETERMINED BY NEUTRON ACTIVATION ANALYSIS

PAOLA DE SOUZA SANTOS, VERA AKIKO MAIHARA, MITIKO SAIKI.

INSTITUTO DE PESQUISAS ENERGÉTICAS E NUCLEARES-IPEN-CNEN/SP

Infant formula is defined as 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. An infant formula is designed to supply nutrient requirements of neonates during the first months of life. Some commercial infant formulas are deliberately fortified with essential elements such as iron, zinc and copper to ensure that they provide infants nutritional requirements for trace elements. There are three major types of infant formula: cow milk, soy-based and protein hydrolyzed formulas. Instrumental Neutron Activation Analysis (INAA) was applied to quantify the essential elements Ca, Fe, K, Na, Se and Zn in three soy-based formulas and 14 infant formulas based on cow milk, being 2 samples for newborns of high risk and 3 for special requirements. The accuracy and precision of the analytical procedure tested with milk powder reference materials NIST SRM 1549 (Non Fat Milk Powder), RM 8435 (Whole Milk Powder) and SRM 1846 Infant Formula were satisfactory. The element concentration ranges obtained in infant formulas were: Ca 2.9-6.9 mg $g^{-1}$, Fe 29-83 µg $g^{-1}$, K 3.6-7.9 mg $g^{-1}$, Na 1.1-2.5 mg $g^{-1}$, Se 0.02-0.1 µg $g^{-1}$ and Zn 25-66 µg $g^{-1}$. The levels of essential elements were within those reported in their from labels, except for one sample (soy-based) which presented Na level 50% higher than the printed label. Most infant milk formulas analyzed are within the dietary recommendation by the National Health Surveillance Agency (ANVISA) and of the Codex Alimentarius. Only one sample (special requirements) presented Fe level lower than the ANVISA recommendation.

Palavras-chave: infant food, nutrient requirement, trace element, mineral

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