Abstract
Aim: The total antioxidant capacity of three beverages based on fruit juice, milk and cereals, intended for infants and young children up to 3 years of age was evaluated by two methods Trolox Equivalent Antioxidant Capacity and Oxygen Radical Absorption Capacity. Results: According to the total antioxidant values obtained by both methods, the beverages can be ranked as follows: grape-orange-banana > peach-apple > pineapple-banana. Ascorbic acid was the main contributor (60%) to the total antioxidant capacity, while the contribution of skimmed milk was less than 1.2%. After one month of storage at -20 oC, significant losses (p < 0.05) in total antioxidant capacity were found, though these were lower than 3% and therefore lacked nutritional significance. The bioaccessible fractions (maximum soluble fraction in simulated gastrointestinal media) of the beverages, obtained by in vitro gastrointestinal digestion, had antioxidant activities significantly lower (p < 0.05) than the original beverages, though the loss of antioxidant activity was always lower than 19% -thus indicating the stability of the total antioxidant capacity under the applied conditions. Conclusions: The total antioxidant capacity values of the bioaccessible fraction show that most antioxidants are available for absorption after digestion, and might contribute to the beneficial effects attributed to antioxidants.

Keywords
Antioxidant capacity, Ascorbic acid, Bioaccessibility, Fruit beverages, Storage.