

Assessment of some mineral levels in canned soft drinks

**Gheorghe V. Goran, Emanuela Badea, Liliana Tudoreanu,
Victor Crivineanu**

*University of Agricultural Sciences and Veterinary Medicine,
Faculty of Veterinary Medicine, Bucharest, Romania*

[Full text:](#)

Abstract

A beverage can is a metal container designed to hold a fixed portion of liquid such as carbonated soft drinks, alcoholic beverages, fruit juices, teas, herbal teas, energy drinks, etc. Generally, beverage cans are made of aluminum (75% of worldwide production) or tin-plated steel (25% worldwide production). Production for all beverage cans is approximately 370 billion cans per year worldwide. Heavy metal and mineral composition of food are of interest because of their essential or toxic nature. Metallic elements in acid medium migrate into food or beverages from containers structure in which they are found as constitutive elements. This study aimed to determine the levels of some heavy metals and minerals in canned soft drinks commonly consumed in Romania, assessing heavy metals health risk in consumers. The research was conducted on 21 non-alcoholic canned soft drinks bought from the local supermarkets, all of them from different producers. Heavy metal and mineral concentrations were determined using ICP-MS. From the 20 evaluated elements, Be, B, Mg, Ga, Sr, Ba, Tl and Bi were below the method detection limit, Co, Cu, Li, and Zn were well below the maximum contaminant levels, and over maximum allowed limits were Cd, Pb and Fe samples in all investigated samples, and Ni in carbonated cola-type soft drinks samples, making from prolonged use of such products a potential threat to human health.

Keywords: *minerals, heavy metals, soft drinks, metallic cans*