

CADMIUM CONTAMINATION IN COW'S MILK: SOURCES, OCCURRENCE AND IMPLICATIONS FOR FOOD SAFETY

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Abstract

Cadmium is a toxic heavy metal with a high bioaccumulation capacity, the presence of which in milk raises food safety and public health concerns. The aim of this article is to analyze the existing data from the specialized literature regarding the sources of cadmium contamination, the transfer mechanisms in the bovine body and the levels detected in milk. A literature review was conducted using studies published in different geographical regions. Data sources included survey articles, field analyses and systematic reviews focused on heavy metal pollution.

The available studies report a significant variability in the level of contamination influenced by exposure routes, region, growing environment and diet, some values approaching or even exceeding the legal limits allowed at European and international level. The highest cadmium concentrations were reported in areas with heavy traffic or industrial activity, with most studies confirming the wide variation in contamination and its correlation with the degree of urbanization and industrialization. The cadmium contamination of milk reflects the direct influence of anthropogenic factors and environmental pollution on animal production.

Key words: *cadmium, heavy metals, food contamination, food safety*