

Potentially Toxic Element Concentrations in Complementary Baby Foods: Emphasis on Cinnamon Flavored Foods

Lead is a toxic element that poses serious health risks to people of all ages, but it is especially harmful during active brain development. This makes children the most vulnerable to its adverse effects. One source of Lead contamination is imported spices, including those from China, Ecuador, and even those packaged in the United States. Infants typically begin consuming complementary baby foods around six months of age, and their diet is influenced by market availability and parental choices. This study analyzed complementary baby foods available in Las Vegas to determine the concentration of potentially toxic elements, including Lead, in cinnamon-flavored products. The samples underwent acid digestion and were analyzed using Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) to quantify metal concentrations. Identifying these contaminants is essential for safeguarding infant health and preventing exposure to harmful substances. The results revealed that five cinnamon-containing baby food products had Lead (Pb) concentrations exceeding the safety limit of 2 mg/kg. Notably, two of these brands were recently added to the FDA's public health alert list due to their dangerously high Lead levels. Further analysis indicated that ground cinnamon contained significantly higher concentrations of Lead (Pb), Arsenic (As), and Cadmium (Cd) than cinnamon sticks. In particular, Lead levels in ground cinnamon were nearly ten times higher than in cinnamon sticks. These findings highlight the urgent need for stricter quality control and monitoring of baby food products to protect young children from heavy metal exposure. Public awareness and regulatory interventions are critical in ensuring that contaminated foods are identified and removed from circulation before they pose health risks to infants. Addressing these issues can help prevent developmental impairments and long-term health consequences associated with toxic metal ingestion in early childhood.