[ID-P#082] Cumin Lead Content in Kuwait

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Introduction: Lead exposure may occur from contaminated foods including spices. Various studies have demonstrated cumin and other spices including turmeric, coriander, and chili powder sometimes contain lead.

Methods: To evaluate lead contamination in cumin sold in Kuwait, we randomly selected popular retail stores in Kuwait City, including one traditional market,to obtain 10 cumin samples. Induced coupled plasma mass spectroscopy (ICP-MS) was used to quantify the lead content in each sample. Our null hypothesis (Ho) was that no sample of cumin in Kuwait contain detectable quantities of lead. This was evaluated by a one sample t-test.

Results: All cumin samples had lead detected ($p<0.0001$). The highest concentration was 0.45 mg/ kg (0.45 PPM).

Discussion: The FDA recommends evaluation of lead contamination in spices on a case-by-case basis, considering the lead quantity, potential health risk, and intended use. The European commission recommends a limit of lead in seed spices like cumin at 0.90 PPM. This far greater than the children's limit of 0.01-0.02 PPM for all other dietary products. Regional variation should be considered due to differences in consumption of spices worldwide and the age of consumers, specifically children. Chronic exposure to even low levels of lead can impact children's neurodevelopment, and minimizing children's exposure to lead in their food and environment is recommended.

Conclusion: No cumin samples we tested for lead contained > 0.9 PPM set limit by the European commission for root spices. Specific limits for lead contamination in spices for consumed by children should be established.