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USDA-FDA Closer to Zero Public Webinar on Baby Foods Reviews Scientific Research Efforts & Engages Industry

A joint USDA-FDA Closer to Zero public webinar on toxic elements in food for babies and young children was held on April 27th via a virtual Zoom meeting, a little over a year after a U.S. House Subcommittee staff report on baby foods tainted with toxic metals was released, and five months after the FDA's initial public webinar on the topic that focused on toxic element exposure and nutrition during the early human developmental life stages. IFT provided comments to FDA in December 2021 related to the initial webinar ([link here](#)). During the late April meeting, the webinar focused more broadly on the "Impacts of Toxic Element Exposure and Nutrition in the Food System."

Agricultural Research

The USDA shared research including a substantial body of work on agricultural practices impacting arsenic uptake in rice and heavy metal accumulation in vegetable crops such as sweet potatoes, carrots, and spinach. The USDA noted this presented data will be made available publicly in the near term.

Detection and Analytics

The USDA Agricultural Research Service (ARS) presented an assessment on food safety and analytical chemistry analyses and the challenges of detection limits versus repeatable quantification limits for toxic elements. They highlighted the concern that just because something can be detected, does not mean it can be repeatedly quantified, and therefore reporting on toxic elements needs to have a sound analytical basis.

NIFA

USDA-NIFA reviewed their activities in support of Closer to Zero. Earlier in April, a non-public USDA-AFRI workshop was held on Toxic Elements in Food: Identification of Critical Knowledge Gaps to Ensure a Safe Food Supply. IFT participated in this workshop as well as in both Closer to Zero public meetings. A preliminary summary of the USDA-AFRI Critical Knowledge Gaps workshop was shared, with the final report expected by the end of May. The Critical Knowledge Gaps report identified multiple areas where NIFA can assist with Closer to Zero initiatives, particularly noted was the low level of understanding of plant uptake of lead and mercury. It was highlighted that other upland grain crops beyond rice, like wheat and corn, were known to be taking up toxic elements from the soil and specifically that hard wheat varieties were more susceptible to cadmium uptake. The preliminary summary highlighted that there is a substantial body of work requiring basic, multi-disciplinary research across the foundational sciences, food & nutrition sciences, and engineering fields needed to answer many of the knowledge gaps that exist to protect the food supply from toxic element contamination.

The NIFA presenters continued with a review of toxic element bioavailability to humans and how that is different from absorption levels and cellular uptake. It was noted during the review that low human (particularly babies and young children) nutrient intake of calcium, iron and zinc can drive cadmium uptake and a low iron status in babies and drive lead uptake in young children. It was also noted that probiotic bacteria in the intestine, particularly lactic acid bacteria, have been found to reduce absorption



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of toxic elements and that the human microbiome flora is affected by the presence of toxic elements in consumed food.

The final USDA-NIFA presentation by USDA-NASS showcased the use of overlaying of a number of example crops (rice, carrots and spinach) county level agricultural production maps against maps of soil toxic element presence from the US geological survey. It is possible to generate these maps across the 48 contiguous US states for many other crops.

ERS Economic Case Study

An economic case study was then presented on Rice by the USDA-Economic Research Service (ERS). They reported that baby food use of rice is a small share of U.S. rice consumption at 1.2% of the total market. Additionally, they highlighted that since the initial identification of issues with arsenic in rice around 2008, the market share of rice-based baby foods declined from 38% to 25% of the US market in 2018, indicating that the media impact reporting on the issue was substantial.

Industry Perspective

The webinar then moved to an industry perspective portion where 10-12 minutes of comments were presented by Betsy Ward with USA Rice, Kay Rentzel from the Sweet Potato Council, Emily Griep with the International Fresh Produce Association, Tom Brenna, with the Seafood Nutrition Partnership, and lastly, Cheryl Callen with Nestle/Gerber. Some highlights from that portion included:

Betsy Ward - "Given that the only FDA action level for infant food right now focuses on inorganic arsenic in baby rice cereal (100 ppb), rice foods are getting the brunt of the negative press, although the levels of inorganic arsenic in rice grown in the USA are the lowest in the world according to the UN and the WHO."

Cheryl Callen - "Data from Gerber's Feeding Infants and Toddlers Study, shows that almost 20% of babies aged 6-12 months in the USA are not getting enough iron, a nutrient essential for cognitive development in the first years of life" and "82% of 6-12-month-old babies ate iron rich foods in 2002 vs. 52% in 2016." Additionally, "adequately nourished infants are also less susceptible to the effects of heavy metal exposure" and "we feel that this conversation (*around infants*) needs to be had in tandem with the heavy metal discussion to make sure that unintended consequences are managed."

Emily Griep - "Changes in plant uptake of heavy metals can be associated with changes in uptake of nutrients as well... and we don't want nutrients that are critical for children's or human health to be lost in those mitigation efforts."

Key conclusions and next steps:

- FDA announced draft guidance proposing an action level of 10 ppb lead in apple juice and 20 ppb lead in other single strength juices or juice blends as a continuing part of the Closer to Zero program
- More public webinars on Closer to Zero will be likely in the coming months



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- Conrad Choiniere, FDA Director with CFSAN and leader of the Toxic Elements Working Group reported that more proposed action levels for toxic elements will be released over the next few months by FDA and that they are in the process of filling in data gaps on toxic elements in the food supply with a broad-based testing program that will continue to expand Closer to Zero action levels to other food categories over time.
- FDA/USDA and other portions of the Department of Health and Human Services are jointly working together on filling gaps in information regarding US human breastmilk toxic element levels and exposure of mothers to toxic elements.

Additional links to information on the US Closer to Zero toxic element program: [Closer to Zero: Action Plan for Baby Foods | FDA](#)

November 2021 FDA Closer to Zero Meeting Information

https://fda.zoomgov.com/rec/share/ws_EwJ9AX_2svXV0VkjSrQ1X8Mmijcbp4-6cFsUz2M0UfYzwXIBm-AS_EDm6AfkB.asZjf-AhILFKycF-FDA_Grand_Rounds_Announcement_Form_20211101_1516.pdf

April 2022 FDA Closer to Zero Meeting Information

[FDA Issues Draft Guidance to Industry on Action Levels for Lead in Juice | FDA](#)

[Draft Guidance for Industry: Action Levels for Lead in Juice | FDA](#)

[Contemporary Issues in Risk Assessment \(toxicology.org\)](#)

[Challenges and Considerations When Balancing the Risks of Contaminants with the Benefits of Fruits and Vegetables for Infants and Toddlers - PubMed \(nih.gov\)](#)