

A scientific approach to prioritize chemical hazards in food raw materials based on global food intake

Yong Joo Chung

Nestle Research Center, Switzerland

Abstract

Methods

Management of contaminants in food raw materials is a key for producing safe foods. Complying with Health based-guidance values makes sure consumers being protected from contaminants of concern. This presentation will introduce a globally valid chemical risk assessment tool that provides the user with a priority rating in terms of which chemicals are important to manage in raw materials based on global dietary information. The process involves the use of decision trees that enable the determination of risk (or "likelihood to cause harm") and severity using objective and transparent selection criteria. Thereafter, severity and risk are positioned in an HACCP-like matrix, informing on the prioritization level of each combination of chemical hazard and raw material. The developed model is intended to be adequately protective for consumer's health, as it considers a conservative food intake scenario, as well as various sources of contaminant exposure. The model's design is flexible and can easily be adapted to the needs of different food product categories and scenarios. The model was tested using several examples, the results of which are consistent with existing data in the literature. Case studies including heavy metal and mycotoxin will be presented to illustrate the feasibility of the approach.

Biograph :

Yong Joo Chung has his education in Food Science and Toxicology and experience in allergen and chemical risk assessment. He involves in safety assessment for new or existing ingredients for human and for pets. While he works on safety assessment, he had an opportunity in developing a tool for managing contaminants in raw materials,

which influences most of Nestle business. The model is based on global consumption, extensive analytical data, and HBGVs to protect consumers from chemical contaminants. This approach covers all food categories except infant foods and pet foods. He is currently focusing on contaminant management and alternative method development for risk assessment