



FOOD CONTROL CONFERENCE 2024 24 - 25 October 2024, Ha Noi – Viet Nam

Pesticide residues in our diet - How can we ensure that our health will not be harmed?

Lars Niemann

German Federal Institute for Risk Assessment

Abstract

The use of plant protection products is essential and inevitable to secure sufficient food supply for a still increasing world population (food security) and to protect humans from diseases resulting from the contamination of crops or processed foods, mostly by fungi or their toxins (food safety).

However, due to their inherent toxicities, rigorous testing and critical evaluation of pesticides are needed since they can harm human and animal health or exhibit detrimental effects on the environment. Pesticide residues in agricultural products are inevitable but must be kept below legal limits to guarantee that exposure levels in food and feed do not exceed the safe doses. So far, the substance-specific health-based guidance values (HBGV) for long-term or acute dietary exposure are usually based on studies in laboratory animals, in which doses without adverse health effects serve as the point of departure for their derivation.

In this presentation, a general overview on the comprehensive and complex system of toxicological testing and assessment in the European Union will be given and further substantiated by a few examples of active compounds, their toxic properties and how they are reflected in regulatory decisions. Moreover, in addition to this traditional approach, exciting developments of new approach methodologies with use of fewer animals but rather more reliance on scientific knowledge will be addressed at least in brief.

Keywords: *pesticide residues, toxicological testing*