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ORIGINAL PAPER

Food contaminated with pesticides and heavy metals – an underestimated public health threat*

Jarosław Chmielewski[1, 2], Barbara Gworek[3], Jolanta Bąk-Badowska[4], Ewa Zięba[5], Piotr Szenk[6], Ilona Żeber-Dzikowska[7]

**[1] Department of Public Health,
Academy of Medical Sciences of Applied and Holistic Sciences in Warsaw, Poland
[2] Collegium Medicum,
The Jan Kochanowski University in Kielce, Poland
[3] Department of Environmental Chemistry and Risk Assessment,
The Institute of Environmental Protection – National Research Institute, Warsaw, Poland
[4] Faculty of Exact and Natural Sciences,
The Jan Kochanowski University in Kielce, Poland
[5] Collegium Medicum,
The Jan Kochanowski University in Kielce, Poland
[6] Faculty of Medicine,
Lazarski University in Warsaw, Poland
[7] Faculty of Pedagogy and Psychology,
The Jan Kochanowski University in Kielce, Poland**

Abstract

Food contaminated with chemical substances poses a significant threat to human health and, therefore, should be of concern for both environmental and public health. Pesticides and heavy metals represent important examples of such hazards. Long-term exposure resulting from the consumption of contaminated food may lead to serious adverse health outcomes. Objective: This study aimed to systematize current knowledge on food contamination with pesticides and heavy metals. The paper reviews relevant legal regulations and presents recent research results on the presence of these compounds in food and their potential health effects on consumers. Methods: A review of epidemiological studies reporting adverse health outcomes was performed. Data analysis and bibliometric review covered the period 2020–2024 and included information from official food control as well as reports of institutions responsible for food quality and safety assessment in Poland. The literature search was conducted using the PubMed, Scopus, and Google Scholar databases. Selection criteria included open access availability and specific subject classification keywords. Results: Findings from official food control and scientific studies confirm the presence of pesticide and heavy metal contamination in food products. Conclusions: Official food control in Poland should include a larger number of food samples in their raw state and after processing to provide a more comprehensive picture of potential consumer exposure.

Keywords: food, metals, pesticides, pollution, health risks

Jarosław Chmielewski, Ph.D., Academy of Medical Sciences of Applied and Holistic Sciences, St. Kasprzaka 49, 01-234 Warsaw, Poland, e-mail: jaroslaw.chmielewski@amh.edu.pl
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