



ID der Kurzfassung : 525

From landscape to liver: exploring trace element exposure in wild boar from Brandenburg, Germany

Inhalt

Wild boar (*Sus scrofa*) can serve as a bioindicator of environmental exposure to trace elements because of its close contact with soil, omnivorous diet, and use of diverse habitats. Because wild boar meat and organs are consumed by humans, element accumulation in this species is relevant to food safety. This study explored factors associated with element accumulation in wild boar liver.

Liver samples from 81 wild boars from 12 hunting districts in Brandenburg were analyzed for 20 trace elements by ICP-MS. Linear mixed-effects models assessed associations between liver element concentrations and individual traits (age, sex), dietary and habitat-related indicators ($\delta^{13}\text{C}$, $\delta^{15}\text{N}$), and landscape context (urban land cover, agriculture–forest gradient), with hunting district as a random effect.

Element-specific patterns were observed. $\delta^{13}\text{C}$ showed the strongest and most consistent associations, suggesting that foraging ecology may influence exposure. Age was associated with selected elements, including higher Cd and lower As, Pb, Zn, and Tl. Landscape effects included higher As in forested areas and higher Cd in urbanized surroundings. Hunting district explained substantial variation for several elements.

Overall, these preliminary findings indicate that biological traits, isotope signatures, and landscape context contribute to trace element accumulation in wild boar liver. Further work will investigate element-specific sources and refine interpretation of contamination pathways.

Keywords

wild boar, trace elements; bioaccumulation; landscape; stable isotopes

Registration ID

OHS26-207

Professional Status of the Speaker

Senior Scientist

Junior Scientist Status

No, I am not a Junior Scientist.

Autor: DURKALEC, Maciej (Bundesinstitut für Risikobewertung)

Co-Autoren: Dr. MATEUS-VARGAS, Rafael Hernán (University of Göttingen); Herr SCHMIDT, Roman (Bundesinstitut für Risikobewertung); Frau PANITZ, Stephanie (Bundesinstitut für Risikobewertung); Dr. RUPP, Jana (Bundesinstitut für Risikobewertung); Dr. GIMPEL, Melanie (Bundesinstitut für Risikobewertung); Dr. ROLOFF, Alexander (Bundesinstitut für Risikobewertung); Dr. FAUHL-HASSEK, Carsten (Bundesinstitut für Risikobewertung); Prof. STEINHOFF-WAGNER, Julia (University of Munich); Dr. PIEPER, Robert (Bundesinstitut für Risikobewertung); Dr. MADER, Anneluise (Bundesinstitut für Risikobewertung)

Vortragende(r): DURKALEC, Maciej (Bundesinstitut für Risikobewertung)

Track Klassifizierung: Climate Change, Ecosystems, Environmental Pollution

Typ des Beitrags: Poster presentation

Eingereicht von **DURKALEC, Maciej** <maciej.durkalec@bfr.bund.de> am **Montag, 29. Juni 2026**