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Conference Abstract

Another one bites the dust: pollutants and pesticides in Garden Dormice found dead

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Abstract

Persistent organic pollutants, pesticides and biocides have a harmful impact on biological diversity. Besides short-term toxic effects on directly exposed organisms, they can have long-term effects resulting in changes of habitats and food chains. Their widespread use makes contact with pesticides and their residues inevitable for some wildlife. However, little is known about the exposure of dormice to pollutants and pesticides.

Garden Dormice found dead were collected from all over Germany and toxicological examinations were conducted. Fifty-seven livers were investigated for anticoagulant rodenticides by liquid chromatography, coupled to tandem mass spectrometry, resulting in 28 rodenticide-positive samples. In addition, livers of 110 Garden Dormice were analysed for 209 different persistent organic pollutants and pesticides using gas chromatography, coupled to tandem mass spectrometry. In total, 21 different analytes were found. At least four and up to 15 different analytes were detected per sample.

Several studies have showed that pesticide exposure negatively affects the nervous, immune and endocrine systems in other species. Possible consequences might be a higher risk of predation, an impaired resistance against pathogens and a negative impact

on reproduction. As many analytes are lipophilic, it seems most likely that species with phases of torpor are especially vulnerable because, during fasting periods, large amounts of toxins might be released from the mobilised fat tissue.

To our knowledge, this is the first study of toxins in free-living Garden Dormice. The possible impact on the decline of this species is not yet fully understood.

Keywords

In Search of the Garden Dormouse, Eliomys quercinus, toxicology, environmental pollution

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