Rodenticide resistance and environmental monitoring

Environmental impact of anticoagulant rodenticides

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Exposure of wildlife to anticoagulant rodenticides (ARs) has been extensively monitored worldwide for a variety of terrestrial species that are directly or indirectly linked to rodents via the terrestrial food web. Recently, our research demonstrated the relevance of aquatic exposure pathways due to AR emissions to the aquatic environment in conjunction with urban rat management practices such as sewer baiting and bait application in close proximity of surface water bodies. In Germany, residues of second-generation ARs have been frequently detected in fish and fish-eating predators from locations influenced by chemical rodent control measures, in spite of strict regulations regarding the sale, supply, and use of ARs to mitigate exposure risks. Moreover, new research data confirmed that there will be adverse effects of chronic second-generation AR exposure on fish health at concentrations relevant for surface water bodies. Unfortunately, the release of rodenticides to the aquatic environment due to the deployment of unprotected bait by wire during sewer baiting continues to be a serious environmental issue based on German survey results from 2022. Given the increasing number of technical solutions available on the market that comply with best practice guidelines, there is an urgent need to rethink (former) rat management practices in urban and peri-urban settings to prevent such AR emissions, and the ecotoxicological consequences thereof, in the future.