ISWAVLD 2023

International Symposium of the World Association of Veterinary Laboratory Diagnosticians

29 JUNE-1 JULY 2023 Congress Centre Lyon

Towards the veterinary diagnostics of the future

Main topic : Toxicology in animal health and environment

Interest of the faecal and plasma matrix for monitoring the exposure of wildlife or domestic animals to anticoagulant rodenticides

RACHED A. [1], MAHJOUB T. [1], FAFOURNOUX A. [1], BARBIER B. [1], FOUREL I. [1], CARUEL H. [1], LEFEBVRE S. [1], LATTARD V. [1], SORO S. [1]

[1] VetAgro Sup, Lyon, France

Introduction : Anticoagulant rodenticides (ARs), particularly second-generation compounds (SGAR), are known to be a potential threat to unintended species due to their tissue persistence. The liver is the storage tissue of ARs and is a matrix of choice in diagnosing exposure and intoxication of non-target fauna. However, it is only available on dead animals. Blood and faeces can be used on living animals. These two biological matrices were compared in terms of their relevance to exposure to ARs.
Methods : In addressing this question, we compared the faecal, plasma and liver concentrations of bromadiolone, one of the SGAR frequently implicated in wildlife exposure. We studied this comparison at the individual level and at the population level, considering three influencing factors: dose, sex and time.
Results : Our findings demonstrate that faecal analyses are more valuable than plasma analyses for monitoring AR exposure of domestic and wild animals, even if faecal concentrations cannot be correlated with liver concentrations.