

Predatory and scavenger birds (e.g. eagles, buzzards, hawks, falcons) can be used to assess the risks of bioaccumulative compounds which tend to accumulate in the environment. These animals by feeding on weakened and dead animals are particularly exposed to the consumption of species contaminated with hydroxycoumarin rodenticides.

The aim of this project is get to know the time of disappearance of rodenticide in dead animal tissues in different environmental conditions, which will complement the missing data on the risks that these compounds pose for the environment and humans. The research will also allow us to assess the suitability of samples stored under different temperatures for toxicological studies and to estimate the exposure of birds of prey (e.g. eagles, buzzards, hawks, falcons) in Poland. This data is particularly important because it has not been reported in international literature yet.

Studies of exposure to rodenticide residues and the stability of the analytes in the livers of dead animals, will be performed on the naturally contaminated samples from cases of mammal poisonings (dogs, cats, mice, rats) and birds (prey and scavengers). The liver samples will be stored under monitored environmental conditions at three temperatures (– 20 °C, 6 °C and 20 °C ) and will be subjected to quantitative testing at predetermined time intervals. For the determination of analytes in liver samples a liquid chromatography coupled with mass spectrometry method will be developed and validated.

Among the elements of the feeding chain of birds of prey mouse and / or rat liver, caught in captivity in various regions of Poland, and the liver of dead mice and / or rats, found near the places where poisons containing hydroxycoumarin rodenticides will be examined. Liver and / or blood samples from predatory / scavenger birds (e.g. eagles, buzzards, hawks, falcons), which went to treatment and rehabilitation centers of wild animals, will also be tested.

The results of the research, carried out within the project, will allow to assess the risk of toxicity of hydroxycoumarin rodenticides and allow to supplement missing data on rodenticide concentration changes in liver samples under different environmental conditions. Experiments will allow to perform a more complete assessment of the risk to predators, including many species of birds protected by law, which is of great importance. In addition, sources and levels of exposure to residues of mouse and rat poisons of predatory and scavenger birds (e.g. eagles, buzzards, hawks, falcons) in Poland will be identified.