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Assessment of Mercury and organochlorine pesticides concentration in turtles in the Xingu River Basin, Brazil

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Due to the toxicity and high environmental persistence of organochlorine pesticides and mercury in aquatic organisms, turtles have been studied as environment biomonitors. These animals are important sources of protein for the riverside and indigenous peoples of the Brazilian amazon. Organochlorine pesticide and mercury contamination was investigated in *Podocnemis unifilis*. Liver, muscle and fatty tissue samples were removed from 50 specimens collected from five sampling points located in the Xingu River basin, Brazil, and the total mercury (THg) and organochlorine pesticides were analysed. Eight organochlorine pesticides were detected with average concentrations of Σ DDT, Σ Endosulfan and Σ HCH which were 26.17 ± 26.35 , 14.38 ± 23.77 and 1.39 ± 8.46 ng g⁻¹ in moisture content, respectively. DDT compounds were the most predominant, with a greater concentration of pp'-DDT in the liver and pp'-DDD in the muscle. Significant differences were noted between the types of tissues studied, and the concentration of OCPs varied between sampling sites. The

liver and muscle samples contained 134.20 ± 119.30 ng.g⁻¹ THg and 24.86 ± 26.36 ng.g⁻¹ THg, respectively. Each chelonian or meal has, on average, 5.34x more Hg than the highest level established as acceptable. From the results it can be inferred that, given the weekly consumption of chelonians, the riverine and indigenous communities in the Xingu River Basin in Brazil are at risk of chronic consumption of Hg in amounts beyond the acceptable limit. The potential high risk to the health of this population is evident; however, the risk classification needs to be further studied.

Biography

Marina Teófilo Pignati is graduate at Biology from Universidade Federal de Mato Grosso (2008), Master's in Zoology (2011) and has completed her PhD in Zoology from Universidade Federal do Pará, Brazil (2017). She is professor of Universidade Federal do Amapá, Brazil. She has publications and experience in Zoology, acting on the following subjects: Herpetology; Amazon turtle; Reproductive ecology; Ecotoxicology; Pesticides and metals.

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