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BIOCONCENTRATION AND ELIMINATION OF ENDOSULFAN BY YELLOW TETRA FISH · UNDER LABORATORY CONDITIONS. Jonsson, C.M.; Toledo, M.C.F. University of Campinas. Campinas, SP, Brazil.

Endosulfan is a broad spectrum insecticide used in Brazil for cocoa, coffee, cotton and soybean crops protection purpose. Although unstable in the environment, endosulfan is highly toxic to fish, with LC50 values in the range of ppb. In this study we investigated the uptake and elimination of endosulfan by yellow tetra (Hyphessobrycon bifasciatus), a specie widely distributed in ponds and lakes of Southern Brazil. Fish were exposed to a mean concentration of 0,3 µg/l endosulfan in water, under semi-static conditions, during 21 days. Pesticide residues (α- and β-isomers and endosulfan sulfate) were determined using GLC with EC detector. The level of endosulfan in the whole fish at the end of the exposure in water was 1.702 ± 0.072 µg/g b.w. and the bioconcentration factor was 11,583 ± ,2,361. Total endosulfan residues were eliminated rapidly, with biological half-life of 1.81 ± 0.35 days. In another experiment, fish were fed a diet containing 5.87 ppm endosulfan during 181 days. In this study a concentration of 1,539 ± 0.368 µg/g total endosulfan was determined in the fish tissues at the end of the exposure. Histopathological studies showed damages in the liver related to subacute effects, evidencing lipid accumulation as the most common alteration.