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Mercury distribution in the main compartments of the eutrophic Lake Candia (Northern Italy)

Maria Chiara FONTANELLA, Oscar RAVERA*, Gian Maria BEONE[1)], Nicoletta RICCARDI and Ilenia CATTANI[1)]

CNR - Institute of Ecosystem Study, Largo Tonolli 50, I – 28922 Verbania Pallanza, Italy
[1)]Università Cattolica del Sacro Cuore, Istituto di Chimica Agraria e Ambientale, Via E. Parmense 84, 29100 Piacenza, Italy
*e-mail corresponding author: oscar.ravera@ise.cnr.it

ABSTRACT

Total mercury (T-Hg) and organic mercury (mainly methylmercury, MeHg) concentrations in the most important compartments (water, sediment, macrophytes, zooplankton, mussels and fish) of the shallow and eutrophic Lake Candia (Turin, Northern Italy) were measured. The decreasing sequence of the T-Hg concentrations is as follows: cat-fish (143 µg kg^{-1} d.w.), zooplankton (77 µg kg^{-1} d.w.), Unio pictorum mancus *(37.9 µg kg^{-1} d.w.), macrophytes (28.9 µg kg^{-1} d.w.). The content of mercury in mussel tissues increased with the size of the animal, but the relationship between Hg concentration and tissue weight was negative, indicating that the rate of mercury accumulation was lower than the tissue growth rate. The amount of mercury accumulated in the mussels living in the lake sediments was estimated to be 0.54 µg m^{-2}. The importance of mercury biomagnification is also discussed.*

Key words: fish, mollusc, macrophytes, zooplankton, mercury, biomagnification