Egypt.J. Aquat. Biol.&Fish. Vol. lONo.l: 173 - 189 (2006) ISSN 1110 - 6131

TRACE METALS BINDING TO HUMIC AND FULVIC ACIDS FROM SURFACIAL SEDIMENTS OF LAKE MANZALAH, EGYPT.

Mohamed A. Okbah[1] and Mohamed A. Hamed[2]

1- National Institute of Oceanography and Fisheries kayet bay,
Alexandria, Egypt 2- National Institute of Oceanography and Fisheries Suez, Egypt

Keywords: Trace metals, humic acid, fulvic acid, Lake Manzalah, sediments.

ABSTRACT

Twelve sediment samples were collected from Lake Manzalah during summer. 2004,to examine the influence of dissolved humic and fulvic acids on the distribution of trace metals in surficial sediments of the Lake. Trace metal concentrations in the humic acid extracted from the Lake sediments showed considerably high contents of iron (1046-3069 u,g/g); copper (234-1498 ug/g) and zinc (110-394 ug/g) . The other trace metals (Co, Cd, Cr, Ni and Mn) revealed low concentrations, ranging from 11.3 to 156 ug/g. The metal concentrations in fulvic acid were in the following order: Fe (465-2767 jag/g); Cu (49.6-250.6 ^ig/g); Zn (49.3-186.6 ng/g); Cd (39.6-80.8 ug/g); Ni (20.4-153.4 [ig/g); Co (12.5-78.0 ^g/g); Mn (11.8-55.9 pg/g) and Cr (9.1-39.6 tig/g). The values of Cu and Cd percentage associated with the humic acid were high comparing with that reported in the other metals: this relative percentage was decreased for the same metals in association with fulvic acid. In general, the results indicated that the amounts of trace metals in humic acids decreased as follows: Fe > Cu >Zn > Ni > Co > Cd > Mn > Cr. While in fulvic acid the order was: Fe > Cu >Zn > Cd > Ni > Co > Mn > Cr.