شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

بعض الوثائق الاصلية تالفة

بالرسالة صفحات لم ترد بالاصل

South Valley University
Aswan – Faculty of Science
Department of Chemistry

CHEMICAL STUDY ON SOME EGYPTIAN LAKES

A Thesis
Submitted for the degree of Ph.D.
(In Chemistry)

presented by

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To

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(1427 – 2006)

ABSTRACT

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Title:

Chemical Study on Some Egyptian Lakes

Mohamed A. Mahfouz

The natural environment is distinguished by strict balance between plant and animal, also between water and air. Man represents one of these elements that affect the environmental system and his influence may often lead to disorder in the balance, and that's for not regarding that influence on all components.

The main objectives of this study are to follow up the distribution of some heavy and major metals between different ecosystem components (sediment, pore water, water, aquatic plant, fish, shell) in The four river Nile delta lakes namely Mariut, Edku, Burullus and Manzala, the sites of the last Egyptian use of the Nile water before flowing to the Mediterranean sea. Many samples from these components were collected, then analyzed for Fe, Mn, Mg, Zn, Pb, Cd, Ni, Co, Cu, using atomic absorption spectrophotometeric technique. The bioaccumulation factor (BF) was applied on the results of analysis. Water quality variables were monitored at surface and bottom water. Applying leaching sequential technique on sediment, using different extracting solutions, Mn and Pb exhibited good ability to be adsorbed or co-precipitated with amorphous iron-manganese oxides. It appears that, Fe, Ni, Cu and Zn are highly distributed in organic form, while Co and Mg are density presented in highly resistant lattice. Available cadmium concentrations are the dominant form. Overall the total trace metal concentrations were higher than natural back ground levels except for Fe, hence reflect the dangerous status of the northern delta lakes. Chemical partitioning patterns of metal show decrease in concentrations of

ABSTRACT

measured metals in sediment (in exchangeable fraction), that reflects the decrease of pore water contents, wherefore the water body is characterized by low metal concentrations. The alkaline pH-values of lakes water minimize the flux of metal ions from sediment and increase of metals sedimentation rate. Analysis of *Tilapia nilotica* reflect high concentrations of Fe, Co, Ni, Zn and Pb in stomach. while Mn exhibited highest concentration in intestin of *nilotica*. Also, Cd recorded highest concentration in *nilotica* muscle. Liver of *nilotica* contains high Cu and Mg concentrations. The aquatic plant in the lake recorded elevated concentrations of Mn, Fe and Cu compared with all other measured metals. Based on the obtained data, the distribution of heavy metals and bioaccumulation factors in aquatic plants and *Tilapia* indicated that the concentrations of these metals are derived from water.

Key Words: Aqueous ecosystem, bioavailability, metal speciation, internal metal distribution, bioaccumulation factors, the northern Delta lakes, Egypt.

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