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Monitoring of some physico-chemical properties and bacteriological pollutions in surface water of Nile river (Rosetta Branch) in Egypt.

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The experiment was conducted at Nile River (Rosetta branch) in Edfina, Beheira Governorate during three months (December 2016, January and February 2017). The physical parameters such as (Temperature (T), pH, Electrical Conductivity (EC) and total dissolve solid (TDS)) were measured in surface water. The results showed that temperature and TDS were low significant within the permissible limits, but the pH was high significant (8.83) in February 2017. Also, chemical parameters were evaluated and the Dissolved Oxygen (DO) was high significant in January 2017, Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD) in December 2016. The concentration of ammonia ion ($\text{NH}_3\text{-N}$), nitrite ($\text{NO}_2\text{-N}$) and nitrate ($\text{NO}_3\text{-N}$) were fluctuation during the period of study. Some heavy metals were estimated in this study; cadmium, iron, cooper, lead, manganese and zinc were less significant than the permissible limits. The results indicated that were within the allowable limits according to Egyptian law number 48 of 1982. Microbiological tests were also carried out in the present study measuring total coliform, total fecal coliform and number of algae, the results showed that the highly significant values of the bacteriological counts such as total coliforms (130001.33 MPN/100ml), faecal coliforms (17002.33 MPN/100ml) in February 2017, but the low significant values in the counts of total and fecal coliform and recoded 35003.33 in December 2016 and 1401.33 in January 2017, respectively. Also, the results obtained the algae were high significant (1621.33 N/ml) in January 2017 and low significant (406.33 N/ml) in December 2016. The results indicate that the river is highly polluted by various chemical pollutants and pathogenic bacteria. Regular monitoring and immediate measures are required to reduce risks on public health and the environment.

Keyword: Nile River (Roseta Branch), surface water pollutions, physicals, chemicals, Bacteriology, Egypt.

Biography

Hassan Ali Shaldam is currently Manager of water pollutants Department (chemicals, pesticides and Bacteriology), Preventive Affairs, Ministry of Health, Egypt. He accumulated 6-years of experience in water pollutions (chemicals and bacteriology). He has B.Sc. Agriculture Science "Chemistry of Pesticide Department", 2000, Alexandria University, M.Sc. in toxicological studies of pesticides, Department of Chemistry and Toxicology of Pesticides, Alexandria University 2007 and PhD. in Adverse effects of pesticides on endocrine system in rats, Chemistry and Toxicology, Department of Plant Protection, Damanhour University 2012. Research interests about water and air pollutions, Pesticide Chemistry and Toxicology, plant protection.

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