Influence of effluent discharge on some Microbiolocal and physicochemical aspects of ismailia canal water

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The Ismailia Canal is the principle source of drinking water supply for a great number of the Egyptian citizens (about 12 million inhabitants), including those living in northern part of Cairo, Shubra El-Khema, Mattaria, Musturod, Abu-Zaabal, Inchas, Belbeis, Abbasa, Abu-Hammad, Zagazeeg and El-Tell El-Kabier, before entering the Suez Canal Province. The aim of this study is to assess the influence of three industrial effluents on the water quality of Ismailia Canal surface. Also, to find a suitable natural attenuation process to purify these water supplies from specific pollutants. Thirty six water samples were collected from Ismailia Canal (9 water samples seasonally) and assessed for the different physicochemical and microbiological parameters. These analyses showed that the three Companies under study provide the canal water with different pollutants especially heavy metals and bacteria. Sanitation of Pseudomonas aeruginosa using bacteriophages and sanitation of trace metals using nanocomposite. The following bacterial species were isolated from the canal water; E.coli, Pseudomonas aeruginosa, Enterococcus fecalis, Aeromonas hyDROPhila and Proteus vulgaris. The isolated fungal species were Aspergillus niger, Aspergillus tamurii Aspergillus fumigatus and Pacilomyces sp. The two sanitations carried out successfully. So, we can say that these three companies have a harmful effect of the Canal water; especially which those effluent discharges exceeds the maximum limits described by law 48 for the year 1982.Keywords: Ismailia Canal, Water quality, Industrial pollution, bacteriophage, nanocomposite.