Evaluation of microbial bio indicators of Gargar river and the effect of warmwater fish farms effluent on on the river

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Abstract:

KAROON has the highest discharge among Iran's rivers which has a strategic location in the west and southwest of Iran due to the presence of several industrial centers, agricultural fields and also big cities in its margin and water quality optimization is a necessity. This river is divided into GARGAR and SHOTAIT Rivers by crossing the boundary. The GARGAR River is located in the eastern shore of the KAROON River, which rejoins with the SHOTAIT and DEZ rivers by passing through SHUSHTAR city and the distance of 78Kms, then reforms the big KAROON. The present study was conducted to investigate some of the microbial indicators of the GARGAR river water and compare it with international standards as well as the effect of warmwater fish farms wastewater on it. For this purpose, 9 stations were designated:1 station before split up the River and 4 stations along the Gargar River and fish farm effluent and 1 station from Shoteit branch and finally 1 station after the crossing of the Shoteit, Gargar and Dez branches, in the Great KAROON River and 2 stations from the farms. Total number of bacteria, coliforms and also total numbers of fecal coliform were evaluated. The results of this study showed that the highest and the lowest mean of all bacterial indices (number of bacteria, total number of total coliform and fecal coliform) were obtained from stations 2 (after the wastewater discharge site in Shushtar) and 1 (before the two branches were flooded and in upstream area of the MIZAN band). This result showed that the contaminated sources of both branches are same and all stations were higher than the allowable discharge of wastewater and different uses, which suggests that the sources of pollutants in the river are numerous and is not limited to waste water from fish farms. It can be concluded that, although water bacterial flora is affected by human and agricultural activities, fish farms effluent is not considered as the only source of bacterial contamination for the river.

Keywords: Bacterial contamination, Fish farms, Wastewater, Gargar River