Investigating the rate of fish farms water and effluent contamination to E. coli and Coliform bacteria in the Gargar river basin established on international standards

Mina Ahangarzadeh[1], Hossein Houshmand[1], Simin Dehghan Madiseh[1], Seyed Reza S. mortezaei[2]

1- South Iran Aquaculture Research Institute, Iranian Fisheries Science Research Institute, Agricultural Research Education and Extension Organization (AREEO), Ahvaz, Iran.
2- Iranian Fisheries Science Research Institute, Agricultural Research Education and Extension Organization (AREEO), Tehran, Iran.

Corresponding Autour: m.ahangarzadeh@areeo.ac.ir

Abstract

The aim of this study was to compare the water contamination of the hydrothermal fish farms with their effluent to E. coli and Coliform bacteria according to international standards. For this purpose, the two stations located at the entrance of water to the farms and 2 stations in the discharge of wastewater into the GARGAR river were sampled monthly. The tests included the total number of coliforms and E. coli numbers. Results showed that the average number of coliform in two fish farms station 28283.33 MPN / 100 ml and 33380 MPN / 100ml in two station of effluents and probably E. coli average number 1316.66 and 2494.5 MPN / 100ml on farms and wastewater respectively. The grouping of different stations by Tukey's test in terms of the number of probaply E. coli and E. coli showed that all stations are in the same group and do not have significant differences with each other. The average of total coliform and fecal coliform of farms wastewater was higher than the permissible limit for wastewater discharge to surface water. According to EPA standard for most applications, including irrigation products that are eaten raw and entertaining use (contact with water) swimming, water sports are not allowed. The average number of fecal coliforms in fish farms is higher than the standard for raising fish (less than 1000), which could be a risk for increasing the number of fecal coliforms in the river.

Keywords: coliform. E. coli, sewage farms, the international standard