

Determination of Bacteriological and Physiochemical Parameters of Drinking Water of Gorgan city, Iran (2010)

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Abstract

Background and objectives: Microbial, physical and chemical properties of drinking water, considering type and quantity of the drinking water, are the factors for determining the acceptability of water. The effect of each of the above components on increasing the quality of water or threatening the health of consumers is also considerable. We aimed to investigate the trace amounts of microbial, physical and chemical parameters of drinking water in Gorgan, comparing to national and international standard.

Material and Methods: In this cross sectional study, 50 samples were taken, per month, from four pilot stations in urban water network of Gorgan during one year (2009- 2010). We used instant sampling and performed Enumeration of Coliforms in water culture with most probable number (MPN). Samples taken from the stations during the month were investigated in two general categories of device test and heading-meter. All experiments were performed using standard reference method.

Results: of 598 water samples 551 (92.2%) have not Coliforms, 47 (7.8%) contain Coliforms and 16 (2.7%) of them have thermo-tolerant Coliforms. Mean water hardness is 413mg/L, base on carbonate calcium. The amount of fluoride about 0.35 mg and the residual chlorine about 0.6 mg is less than national standard amount.

Conclusion: The results show that Gorgan water network is, in view of microbial contamination, safe during almost all days. All the tested samples in terms of physical and chemical parameters are in the range of nation and international standards. Hardness of drinking water of Gorgan is one of the highest.

Key words: Bacteriological, Physiochemical, Drinking Water, Gorgan.