عنوان مقاله:

A survey of heterotrophic bacteria and coliforms in the water of old and new distribution networks

محل انتشار:

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نویسندگان:

Atefeh Jaleilzadeh - *Student Research Committee, Department of Environmental Health Engineering, School of Public Health and Paramedicine, Semnan University of Medical Sciences, Semnan, Iran*

Marzyeh Ghaesari - *Student Research Committee, Department of Environmental Health Engineering, School of Public Health and Paramedicine, Semnan University of Medical Sciences, Semnan, Iran*

Mahdi Toosi - *Student Research Committee, Department of Environmental Health Engineering, School of Public Health and Paramedicine, Semnan University of Medical Sciences, Semnan, Iran*

Mohammad Safari - *Student Research Committee, Department of Environmental Health Engineering, School of Public Health and Paramedicine, Semnan University of Medical Sciences, Semnan, Iran*

خلاصه مقاله:

Controlling the microbiological quality of water is important for its uses. Microbiological requirements of drinking water ensure the absence of coliforms, but may indicate the potential presence of other potentially pathogenic microorganisms and viruses of fecal origin. A total of 36 water samples, representing the drinking water of the whole city of Aradan, Semnan, Iran, were randomly collected from the old and new distribution systems of Aradan from December 2014 to June 2015.The hetroterophic plate count (HPC), coliform, residual chlorine, and pH of the samples were measured. Heterotrophic bacteria were measure using R2A and nutrients agar culture media, and the spread plate count method was used to determine HPC. Average concentration of total coliform in the old distribution network (/) was more than the new distribution network (/). The results of studying microbial load in the old and new distribution network showed that there is a significant difference between total coliforms in the two networks (P = 0.002). Moreover, the average concentration of heterotrophic bacteria in the old distribution network [1917.33 colony-forming unit (CFU)/100 ml] was more than that in the new distribution network (14.57 CFU/100 ml). There was a significant difference between the average concentration of heterotrophic bacteria in the old and new distribution networks (P = 0.003). The effects of seasons and the age of the water network on coliform bacteria and heterotrophic bacteria were also studied. The concentrations of heterotrophic bacteria, total coliform, and fecal coliforms were higher in the old distribution network in comparison to that in the new distribution network.

کلمات کلیدی:

Heterotrophic Bacteria, Coliform, Aradan, Water Distribution System