

Comparison of Three Methods of Pour Plate (PP) , Most Probable Number (MPN) and Membrane Filter (MF) for Detection of *Escherichia coli* in Well Water Samples in Tehran's Parks in 2010

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Abstract

Background and objectives: Water-borne diseases are typically caused by pathogens transmitted by orofecal way. Because it is no practical and no economical and also it is time-consuming to find water-borne pathogens in water reservoirs, the laboratory studies are performed on the basis of indicator microorganism. *Escherichia coli* is considered as the most important indicator bacterium for water monitoring. The aim of this study was to evaluate the three methods of Pour Plate (PP), Most Probable Number (MPN) and Membrane Filter (MF) in isolation of *Escherichia coli* in well water of Parks.

Material and Methods: One hundred and sixty five samples of well water, from five geographical zones of north, south, east, west and center of Tehran, were taken in a sterile condition and sent to microbiology department of health faculty to assess with three methods of PP, MPN and MF. The results were analyzed by chi-square.

Results: The results indicate that 90 water samples (54.5%) aren't health. The samples taken from south of Tehran are most contaminant than other zones. The highest contaminated Samples (54.5%) are related to membrane filtration method in comparison with MPN (34.5%) and PP (27.3%).

Conclusion: Since the MF method can recognize the contaminants quickly and effectively, we recommend it more. Based on these results, it is essential to educate children not to drink well water in parks.

Keywords: well water contamination, *Escherichia coli*, Tehran's parks