

The effect of different ions in ultrasonic systems for different frequencies over *Escherichia coli*

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As the water resources diminish and the resources can not be used efficiently; supplying the potable water and the utility water become harder day by day. Pathogen microorganisms and viruses that carry the risk for health contaminates. Chlorine that is used as disinfection is known to create some unwanted chlorinated organic co-products. Trihalomethanes (THM) are examples of one of these compounds, are known cancerogenic and have negative effects on liver, kidney and digestive system. The problems necessitates the new alternative methods in disinfection. One of these alternative method is the ultrasound disinfection that benefits from the sonic and ultrasonic energy. In this study, different frequencies is used in ultrasonic reactor and the effects of different ions were investigated. *Escherichia coli* was used as microorganism. In different frequencies the energy, pressure and temperature that arise from the cavitation bubble collapse affected the bacteria in the environment and the cycling of water to peroxide was obtained. The energy, pressure and temperature changes with the aid of ions. In this study, the direct and indirect effects over bacterial death were investigated.

With the use of diminishing the disinfection amount in different ions and environments, more effective disinfection was obtained and in addition to that different ion environment have made contribution to the nearby remediation. More effective and practical disinfection is very important not only for economical reasons but also for the public health. The results are also significant internationally to the disinfection systems.

Key words: Disinfection, *Escherichia coli*, Media Ion

Biography

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