

Escherichia coli Disinfection: Comparing the Effects of Ultraviolet Light and Sodium Hypochlorite

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The purpose of this project was to compare the effects these two water purification methods had on E. coli. It was hypothesized that Ultraviolet light sterilization would disinfect and kill more E. coli than the Sodium Hypochlorite disinfection method. Since this was a comparative study there was to be two experiments conducted pertaining to each individual disinfection method. For the Ultraviolet disinfection, the E. coli would be exposed to UV radiation for different lengths of time in different groups so it would be evident what amount of time is required to kill the bacterium as effectively as possible. For the Sodium Hypochlorite it is a similar situation except time wasn't the variable it was the concentration of the Sodium Hypochlorite solution. It will be done through different concentrations of the solution; preferably 1%, 0.5%, 0.7%, 0.2% concentrations of Sodium Hypochlorite mixed with the Bacterium and one control. The results of the UV light experiment showed that the effect of UV exposure time against E. coli decreases its survival rate much faster than the Sodium Hypochlorite experiment.