

Coliform Bacteria Contamination in Chlorine-treated Swimming Pool Sports Complex

ABSTRACT

Background and Objective: Sufficient amount of chlorine is needed to be maintained in the pool as not only the adult go for swimming but also children with more sensitive skin. This study was conducted to determine the presence of coliform group of bacteria which involved faecal coliform and *Escherichia coli* as microbial indicators for water quality contamination in the Sports Complex swimming pool water that is treated with chlorine disinfectant. Materials and Methods: Identification of faecal coliform and *Escherichia coli* were done through Membrane Filtration Method from APHA standard. The amount of free chlorine content in the swimming pool were also analyzed using HACH Spectrophotometer in order to relate the reactions of the supplied free chlorine towards the number of the microbial colonies inside the swimming pool. Results: The result shows that the outdoor swimming pool has a higher concentration for both faecal coliform and *Escherichia coli* compare to the indoor swimming pool and the highest concentration of faecal coliform can reached 266 ± 64.65 CFU 100 mL⁻¹ and *Escherichia coli* up to 113 ± 57.40 CFU 100 mL⁻¹. This showed that coliform bacteria still presence in the swimming pool at the sports complex although it has been treated with chlorine disinfectant. In a meantime, for the free chlorine content it showed that the average concentration in outdoor pool were recorded lower at 0.492 ± 0.531 mg L⁻¹ which was way below the minimum limit 1.0 mg L⁻¹ of the permissible NSPF standard, whereas indoor pool were recorded at 1.069 ± 0.585 mg L⁻¹. Conclusion: The microbial presence and chlorine content in indoor swimming pool can be said more hygienic and cleaner to swim compare to the outdoor.