

Bacteriological Survey and Detection of *Escherichia coli*, *Salmonella spp.*, *Streptococcus spp.*, and *Vibrio spp.* in Bottom Sediments from Two Sites in Iloilo River

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Abstract

Bacterial contamination in the Iloilo river occurs because of various human activities. The assessment of the river was done using microbiological parameters (HPC, TC, FC, and FS) for 7 months in Sooc Bridge and Carpenter's Bridge using bottom sediments for samples. Sediment was used because bacteria accumulate over time in the sediment due to high amounts of organic and inorganic matter in the substrate and this leads to better survivability of bacteria. The values obtained from microbiological parameters investigated are generally higher in Sooc Bridge. HPC results show that the higher mean value was in Sooc Bridge (7.43×10^8 CFU/100g). The levels of TC on both sampling sites ranged from 9.5×10^2 to 2.40×10^4 CFU/100g. For TC, Sooc has the higher mean (1.76×10^4 CFU/100g) for 7 months. FC values ranged from 3.0×10^1 to 2.4×10^4 CFU/100g. Sooc bridge has the higher mean (1.17×10^4 CFU/100g) between the 2 sites. Lastly, the FS value range from 2.9×10^3 to 2.4×10^4 CFU/100g. Also, Sooc Bridge has the higher mean value (1.58×10^4 CFU/100g). There are no significant differences on the microbiological parameters used in each site. The FC/FS ratio revealed that mixed fecal materials contaminate the river. Among the four pathogenic bacteria detected, *Salmonella spp.* was the most abundant for 7 months (63-65%) and *E. coli* was the least abundant (>1%). Based on the criteria on sediment quality evaluation, there is little to moderate loading of organic and inorganic matter.