ASSESSEMENT OF HUMAN CONTRIBUTION OF *STAPHYLOCOCCUS AUREUS* AND COLIFORM BACTERIA IN PORT DICKSON RECREATIONAL BEACHES

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Introduction

Attention has been drawn to the use of *Staphylococcus aureus* as an indicator organism especially for the study related to human activities. The levels of staphylococci were significantly correlated with that *S. aureus* and with swimmer density at Hawaii's marine recreational water (Charoenca and Fujioka 1993). Favero (1985) recommended that recreational water to be monitored for staphylococci. Solic (1994) found that survival of *S. aureus* was significantly longer than that of faecal pollution indicators. This study was conducted to determine the contribution and effect of human recreational activities on the bacterial count at Port Dickson recreational beaches.

Materials and Methods

Water samples were collected in sterile polyethylene containers from shore line (1 to 10 meter) at a depth of 0.3 to 1m. All water samples were analysed within 24 hours of collection. The membrane filtration technique using a 0.45µm membrane was used in the enumeration of Staphylococcus *aureus* and total coliforms from marine water samples. The two selective media used to quantitatively recover both bacteria were Chapman (Sartorious) and Tergitol TTC (Sartorious). Samples were incubated for 16 to 24 hours at 35 °C.

Results and Discussion

Results from preliminary study shows that bacteria concentration decrease according to distance from shoreline to the open sea. Most bacteria are concentrated at below 50 meter sampling area. At 200m from the shoreline both bacteria were at very low concentration (mostly <100 CFU/100ml). Samples at 1 to 10m gave the highest count (>5,000 CFU/100 ml) and show that the suitable sampling distance was at the range of 1 to 10m. There were differences between bacterial count on Wednesday and Sunday. The bathers on Sunday were normally higher than on Wednesday. This could probably contribute to the different bacterial count.

Conclusions

Most bacteria were concentrated at less than 50m from the beach. The bacterial counts were higher on Sunday, probably correlated with the increase number of bathers.

References

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