ABSTRACT

The present study focused on sewage pollution in the coastal belt from Mount Lavinia to Bambalapitiya. Sewage pollution was quantified by the membrane filter method and the most probable number method for surface sea water samples taken at twelve sampling stations, with two sub samples taken at 100 m and 200 m distance from the shore line. Faecal pollution was ubiquitous in the sea water samples studied, and the faecal coliform counts ranged from 2,725 /100 ml at North of Mount Lavinia Hotel (M3) to 176,075 /100 ml at Wellawatta Canal (W2); faecal streptococcus counts ranged from 26 /100 ml at Bambalapitiya railway Station (B3) to 6,783.83 /100 ml at Wellawatta Canal (W2); total coliform counts ranged from 3,030 /100 ml at Bambalapitiya Police Station (B2) to 507,558 /100 ml at Wellawatta Canal (W2). The MPN counts done for the five selected sampling stations revealed that *E. coli* counts ranged from 2,270 /100 ml at Mount Lavinia Hotel (M2) to 259,229 /100 ml at Wellawatta Canal (W2).

Faecal bacterial counts in the surface sea waters along the coast were very heterogeneous from one area to another. Faecal coliform counts showed a decreasing sequence in the following order: W2 ($176.075 * 10^3$/100 ml) > W3 ($44.557 * 10^3$/100 ml) > D2 ($39.025 * 10^3$/100 ml) > D1 ($38.1 * 10^3$/100 ml) > W1 ($12.57 * 10^3$/100 ml) > B1 ($11.892 * 10^3$/100 ml) > D3 ($9.297 * 10^3$/100 ml) > B3 ($7.683 * 10^3$/100 ml) > B2 ($7.375 * 10^3$/100 ml) > M1 ($2.725 * 10^3$/100 ml) > M2 ($2.308 * 10^3$/100 ml) > M3 ($2.273 * 10^3$/100 ml).

Faecal streptococcus counts showed a decreasing sequence in the following order: W2 (6,783.83 /100 ml) > D2 (642.75 /100 ml) > D1 (611.75 /100 ml) > W3 (317.75 /100 ml) > D3 (203.085 /100 ml) > B1 (116.58 /100 ml) > W1 (109.5 /100 ml) > B2 (65.67 /100 ml) > M3 (39.415 /100 ml) > M1 (34.415 /100 ml) > M2 (31.415 /100 ml) > B3 (26 /100 ml).

Total coliform counts showed the following decreasing sequence: W2 (507.997 * 10^3 /100 ml) > D2 (51.972 * 10^3/100 ml) > W3 (51.808 * 10^3/100 ml) > W1 (23.577 * 10^3 /100 ml) > B1 (18.0 * 10^3 /100 ml) > D3 (12.38 * 10^3/100 ml) > D1 (12.31 * 10^3/100 ml) > B3 (10.448 * 10^3/100 ml) > M3 (4.69 * 10^3/100 ml) > M1 (4.379 * 10^3/100 ml) > M2 (3.965 * 10^3/100 ml) > B2 (3.03 * 10^3/100 ml).

Most probable number of *E. coli* showed a decreasing sequence as follows: W2 (259.229 * 10^3/100 ml) > D2 (36.017 * 10^3/100 ml) > W1 (5.713 * 10^3/100 ml) > B2 (3.12 * 10^3 /100 ml) > M2 (2.27 * 10^3/100 ml).

Wellawatta Canal had a significant sewage polluting effect (FC = 176,075 /100 ml; FS = 6,783.83 /100 ml; TC = 507,998 /100 ml) at 95% confidence level. There was no significant difference between 100 m and 200 m distances away from the shore, with respect to sewage pollution at each sampling station.