Microbial Analysis of Bottled Drinking Water available in Jaffna Peninsula

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Abstract: More than 20 brands of bottled drinking water are supplied in Jaffna peninsula. People rely on the quality of the bottled drinking water, expecting them to be free of microbial contamination which will not cause any health hazards. The greatest risk from microbes in bottled drinking water is contamination with human and animal excreta, although other sources and routes of exposure may also be significant. In this study, attempts were made to evaluate the quality of bottled drinking water by analyzing its microbial contamination. Bottled drinking water of 22 brands were selected which includes one brand produced in Jaffna and others were brought from out of Jaffna. When the different bottled drinking water brands were analyzed for microorganisms, aerobic bacterial count varied from 0 to 800 colony forming units per mL (cfu/mL). Approximately 63.6% of the bottled drinking water brands contained high amount of aerobic bacterial count than the minimum acceptable level (100 cfu/mL) recommended by the Sri Lanka Standards institution while none of them had anaerobic bacterial contamination. Among the 22 brands, 13.6% of bottled drinking water brands showed fungal contamination and 9.1% were contaminated with coliform bacteria. Out of the 22 brands of bottled drinking water, two (9.1%) contained faecal contamination. This was confirmed by analyzing for *Escherichia coli* and *Klebsiella*. The Brand C (Strain C1) had the *Escherichia coli* and brand D (Strains D1 and D2) had the *Klebsiella*. Therefore all the bottled drinking water brands supplied in Jaffna peninsula are not free from microbes. The RDHS (Regional Director of Health Service) should consider the monitoring of the drinking water brands supplied in Jaffna.

Keywords: Bottled drinking water, Aerobic bacteria, Anaerobic bacteria, Faecal coliform