

## Evaluation of the Microbial and Coliform Contamination During Dry and Rainy Seasons in Water Samples Collected From Some Selected Hospitals

Birunthai Rajendran<sup>1</sup>, Kirupahari Sritharan<sup>2</sup>, Vasantharuba, S.<sup>1</sup>, Balakumar, S.<sup>2</sup> and Vasanthy Arasaratnam<sup>2</sup>

<sup>1</sup>Faculty of Agriculture, University of Jaffna

<sup>2</sup>Department of Biochemistry, Faculty of Medicine, University of Jaffna,

The greatest risk from microbes in water is associated with consumption of drinking-water that is contaminated with human and animal excreta, although other sources and routes of exposure may also be significant. The aims of the present studies were to evaluate the microbial contamination of drinking water and the examination of the coliform occurrence in some selected hospitals during dry and wet seasons. For this study one General hospital, one Base Hospital and three District Hospitals situated in Jaffna peninsula were selected. General Hospital, obtains the water supply through municipal council and from one of the well situated in the hospital. Water from municipal council supply contaminated statistically non significant ( $p > 0.05$ ) number of cells during dry season than the standard level prescribed by Sri Lankan Standard (100 colonies/mL) and contained more counts during wet season. The well water supply contained statistically significant ( $p < 0.05$ ) number of cells during dry and wet seasons. In Base Hospital, there is one dug well and three tube wells. Dug well water and tube wells water contained statistically significant ( $p < 0.05$ ) number of cells during both seasons than that defined by Sri Lankan Standard. Of the three District Hospitals, in the first hospital (Hospital C), there is one dug well and a tube well. Both water supplies for drinking purpose contained significantly ( $p < 0.05$ ) high number of aerobes during dry season and wet season. In the second District hospital (Hospital D), Water for human consumption is obtained from water board supply and Rain water harvest. The water supplied by water board contained statistically non significant ( $p > 0.05$ ) amount of aerobes than the standard level during dry season and statistically significant ( $p > 0.05$ ) during wet season while the rain water harvest contained the aerobic contamination lower than that prescribed by Sri Lankan Standard during dry season and had non significant ( $p > 0.05$ ) amount of aerobic contamination during wet season. In District Hospital 3 (Hospital E), the water sample contained statistically significant ( $p < 0.05$ ) number of counts than the standard level during both seasons. The water samples collected from all the hospitals from different sites contained no anaerobic bacterial contamination. In coliform presumptive test analysis, in General Hospital positive result observed during both seasons in well water supply, in Base Hospital during wet season positive results were observed in all well water samples, in District Hospital 1 (Hospital C) positive result observed in canteen supply during dry season while tube well supply showed positive results during wet season, in District Hospital 2 (Hospital D) no positive results were observed during both seasons, positive results were observed in the well water sample in District Hospital 3 (Hospital E) during wet season. In all the water samples the pH ranged from 7.14-7.68 during dry season while 6.76- 7.44 during wet season. Water samples did not show any significant optical density at 550 and 600 nm.