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### Physico-Chemical Analysis of Bottled Drinking Water Available in Jaffna Peninsula

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More than thousands of bottled drinking water is sold in Jaffna peninsula (19L, 5L, 1.5L, 1L & 0.5L). People rely on its quality of the bottled drinking water. In this study attempts were made to evaluate the quality of sold bottled drinking water by physical (Total Dissolved Solid, Electrical conductivity and pH) and chemical (Nitrate and Calcium) analysis. Bottled drinking water of 22 brands was selected which include one brand produced in Jaffna and others are brought from out of Jaffna. The quality of bottled drinking water sold in Sri Lanka is regulated by SLS that the recommended and Electrical conductivity, Total Dissolved Solid and pH range of bottled water should be 750  $\mu\text{S}/\text{cm}$ , 1000mg/L and 6.5 to 8.5 respectively. Minerals found in bottled water recommended by Sri Lankan Standard (SLS) such as Nitrate and Calcium contents are 50 and 100mg/L respectively. The entire bottled drinking water brands, which are sold in Jaffna, has very low electrical conductivity compared with SLS (750  $\mu\text{S}/\text{cm}$ ) and varied from 19 to 253  $\mu\text{S}/\text{cm}$  with the mean of 80.53 ( $\pm 60.92$ )  $\mu\text{S}/\text{cm}$ . The pH values of the bottled drinking water brands varied from 4.11 to 7.58. Only 9.09% of the bottled drinking water brands contained the pH value above the minimum permitted level (6.5) by Sri Lankan Standard. The Total Dissolved Solid content of the bottled drinking water brands was very low and varied from 9 to 123.67 mg/L with the mean of 39.5 ( $\pm 30.23$ ) mg/L. The calcium content of the bottled drinking water brands was low and varied from 6.48 to 83.77 mg/L with the mean of 49.9 ( $\pm 25.09$ ) mg/L. The nitrate content of the bottled drinking water brands was low and varied from 0.21 to 4.19 mg/L with the mean of 1.26 ( $\pm 1.08$ ) mg/L. Therefore all the drinking water brands supplied in Jaffna peninsula having different amount of physical properties and chemical contents that is low and high amount which are not satisfy Sri Lankan Standard. So, RDHS (Regional Director of Health Service) should consider the specific amount of physical properties and chemical contents in bottled drinking water supplied in Jaffna peninsula.

*Keywords: Calcium, Electrical conductivity, Nitrate, pH, Total Dissolved Solid*