

Contamination Status of Pathogenic Bacteria and Water Quality of Groundwater in *Angunukolapelessa*, Sri Lanka

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Waterborne infections are common and widespread when clean water and sanitation are poor. In Sri Lanka, 2588 *Salmonella* positive cases have been recorded from 2005 to 2013. Therefore, the present study was carried out to evaluate the chemical contamination status of 70 well water sources in *Angunukolapelessa* area where only 30 wells were subjected to microbial analysis to cover *Angunukolapelessa* divisional secretariat division during October 2018. Total coliform, faecal coliform, *Salmonella* spp. and *Shigella* spp. were screened along with some physico-chemical parameters of groundwater. Sampling, transportation and analysis were done following the standard protocols. Statistical analysis was done and thematic maps were prepared using ArcGIS software. Results of the study revealed that entire area was contaminated with both total and faecal coliform bacteria and the values were not within the SLS and WHO drinking water quality standards. Twenty percent of collected samples were positive for *Salmonella* spp. and most of the locations are being used to extract water for drinking purposes. However, *Shigella* spp. was not recorded during the study period. Seventy-one percent of sampling locations were recorded as hard water (121 mg L^{-1}) and around 16% of samples were not within the guideline values given by the SLS drinking water quality for Electrical Conductivity (EC). The minimum and maximum of pH and flouride concentration was recorded as 6.99 - 8.62 and 0.05 to 1.97 mg L^{-1} respectively where the highest flouride concentration was recorded from Daha amuna location. The tested other water quality parameters; N-NO₂, N-NH₃ and total phosphate (TP) concentrations were recorded within the Sri Lanka drinking water standards.

Keywords: Groundwater, *Angunukolapelessa*, Water quality, *Salmonella* spp, *Shigella* spp