

Occurrence of health-related water microorganisms in groundwater of the Kathmandu Valley, Nepal

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Waterborne diseases are one of the most serious public health concerns in the Kathmandu Valley, Nepal; however, the occurrence of waterborne pathogens (viruses, protozoa, and pathogenic bacteria) as well as their indicator microorganisms in aquatic environments of the valley has not yet fully understood.

Through the Global COE program entitled 'Evolution of Research and Education on Integrated River Basin Management in Asian Region' and the Science and Technology Research Partnership for Sustainable Development (SATREPS) program entitled 'Hydro-microbiological Approach for Water Security in Kathmandu Valley, Nepal', we have been trying to determine the occurrence of health-related water microorganisms in water samples of the Kathmandu Valley. Examples of our findings are as follows: (1) Levels of contamination of health-related water microorganisms in groundwater are quite different depending on types of wells; (2) Groundwater is contaminated with animal feces as well as human feces; (3) Waterborne pathogens are frequently detected even in *Escherichia coli*- and/or total coliform-negative samples, indicating that they are unsuitable indicators of pathogen contamination of groundwater.

Some of the results obtained to date in the projects will be presented.

Keywords: Health-related water microorganism, Microbial water quality indicator, Microbial source tracking