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Microbiological assessment of drinking water quality of Delhi, India

Abhishek Chauhan, Anuj Ranjan and Tanu Jindal
Amity University, India

Delhi has emerged as one of the greenest capital city of the world. Microbiological assessment of drinking water emphasizes estimation of the hygienic quality of the water sold with reference to community health significance. This study was conducted to evaluate the quality of drinking water sold by roadside vendors in east, west, north and south zones of capital of India. A total number of 36 samples (nine from each zone) were collected as per national guidelines and studied for microbiological assessment. All the drinking water samples were collected in gamma-sterilized bottles and were kept in an ice pack to prevent any significant change in the microbial flora of the samples during the transportation. The water samples were transported to the laboratory in vertical position maintaining the temperature 1–4°C with ice pack enveloped conditions. Samples were analyzed for total MPN coliform per 100 ml and for the presence and absence of common human pathogenic bacteria such as *Escherichia coli*, *Salmonella*, *Staphylococcus aureus* and *Pseudomonas aeruginosa*. All the samples were found to be contaminated with coliform organisms in the range of 14 to >1600 per 100 ml of sample. Out of 36 water samples, the occurrence of *E. coli* was 61%, *Salmonella* 25% *S. aureus* 14% and *P. aeruginosa* 53% as 22, 9, 5 and 19 samples were found contaminated, respectively. The numbers of coliform bacteria and presence of some common pathogenic bacteria suggested that the quality of drinking water sold by roadside vendors is not within the Indian standard and WHO guidelines laid down for drinking water quality. Hence, there is a vital need to study the root cause in terms of hygiene, sanitation of vendors and source of contamination to prevent waterborne diseases.

Biography

Abhishek Chauhan has completed his MSc and PhD in Microbiology and certificate course in Public Administration from Indian Institute of Public Administration, Delhi, India. He has 12 years of research experience. He is currently working in Amity University, Noida and formerly worked as a Scientist 'C' and Head, Department of Microbiology, Shriram Institute for Industrial Research (SRI), Delhi. He is known for his analytical and research mind-set and investigated approximately more than 25 industry sponsored projects. He has a total 11 years of rich experience and done extensive research on emerging issues of Microbiology and Biotechnology. He has authored a research book on key aspects of antibacterial activity of *Cyanobacteria* and Edited a book entitled *Plants and Microbes: An Innovative Approach*. He has been a reviewer for many peer reviewed journals, published more than 26 research papers and honored with 'Young Scientist Award' 2013. He has selected for national campaign on microbiological and physico-chemical analysis of river Ganga in association with Channel ABP News. He has received First Position Award for his presentation during 11th foundation training course for Scientists and Technologists sponsored by Ministry of Science and Technology, Govt. of India. He is an active member of the Indian Science Congress Association, Society for Plant Research and Association of Microbiologists of India and recently participated in 35th Indian Scientific Expedition to Antarctica.

akchauhan@amity.edu

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