

3rd International Conference on Clinical Microbiology & Microbial Genomics

September 24-26, 2014 Valencia Convention Centre, Spain

Monitoring the quality of the water drawn from the Lahore aquifer

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Good quality potable water is a fundamental requirement for human health and survival but increasing demands on water is creating many problems. Pakistan is one of the largest nations of the world that depends on a single river system. The Ravi river runs through most parts of Lahore and is used both by humans and animals for swimming, bathing and washing purposes, however much of the cities drinking water is extracted from an aquifer. Recently, however, because of the rapid growth of population, industrialization and urbanization the drain on the aquifer has increased, as has the possible contamination. A total viable count was carried out at both 30°C and at 37°C and the plates enumerated reported as total cfu/mL. The test for coliforms was the standard MPN method incubated for 24 hours at 35°C. A confirmatory test was then performed on any positive tubes to determine if faecal coliform bacteria were present. Some of the content of the fermentation tube was transferred to a fresh fermentation tube incubated at 44.5°C for 24 hours. Gas production in the fermentation tube after 24 hours was considered a positive reaction, indicating faecal coliforms. The results were reported as the TVC and the most probable number (MPN) of coliform per 100 mL. The water quality from the aquifer was generally of high quality but there were increased levels of contamination at certain times of the year, and although the levels of microbial contamination did increase the aquifer seemed to undergo natural restoration and the levels dropped to more acceptable levels for the rest of the year.

Biography

Stephen Mortlock is the Global Infectious Diseases and Microbiology Liaison at the Quest Diagnostics Laboratory in Heston, UK. Prior to joining Quest Diagnostics, he was the Chief Microbiologist at the Shaikat Khanum Memorial Cancer Hospital and Research Centre in Lahore, Pakistan and was awarded a DSc for his work setting up an antenatal screening programme for the indigent population. He and colleagues have published over 40 papers on an eclectic mix of subjects from enteric pathogens, food science and saliva cotinine. He has also worked for the Health Protection Agency in the UK and spent time in the Middle East.

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