

Drinking Water Quality of Lahore Pakistan: A Comparison of Quality of Drinking Water from Source and Distribution System

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Abstract : The study monitors the quality of drinking water consumed by urban population of Lahore. A total of 50 drinking water samples (16 from source and 34 from distribution system) were examined for physical, chemical and bacteriological parameters. The parameters including pH, turbidity, electrical conductivity, total dissolved solids, total hardness, calcium, magnesium, total alkalinity, carbonate, sulphate, chloride, nitrite, fluoride, sodium and potassium were analyzed. Sixteen out of fifty samples showed high values of alkalinity compared to EPA standards and WHO guidelines. Twenty-eight samples were analyzed for heavy metals, chromium, iron, copper, zinc, cadmium and lead. Trace amounts of heavy metals were detected in some samples, however for most of the samples values were within the permissible limits although high concentration of zinc was detected in one sample collected from Mughal Pura area. Fifteen samples were analyzed for arsenic. The results were unsatisfactory; around 73% samples showed exceeding values of As. WHO has suggested permissible limits of arsenic < 0.01 ppm, whereas 27 % of samples have shown 0.05 ppm arsenic, which is five times greater than WHO highest permissible limits. All the samples were examined for E. coli bacteria. On the basis of bacteriological analysis, 42 % samples did not meet WHO guidelines and were unsafe for drinking.

Keywords : arsenic, heavy metals, ground water, Lahore

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