Assessment of water quality of River Ganga during COVID-19 lockdown

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ABSTRACT

We have done a qualitative and quantitative analysis of Ganga River water in two areas namely Palta and Diamond Harbour, in the state of West Bengal, India. Anthropogenic activity is very high in these regions. Restriction of human activity near river basins due to the prolonged COVID-19 lockdown has brought remarkable changes in the environment. A comparison of the pre-lockdown period and the lockdown period was done. The study covered the years from March 2019 to May 2020. Results demonstrate improvement in surface water quality of River Ganga, during the lockdown period as there was less anthropogenic activity. The water quality test revealed that turbidity has reduced to <94% during the lockdown. River Ganga was one of the polluted rivers, unfit for a bath but physicochemical properties like turbidity, total suspended solids, and total dissolved solids have improved enormously during the lockdown. The chemical oxygen demand, biochemical oxygen demand has changed from 12 and 3 mg/L to <6 and 1.2 mg/L, respectively. Consecutively, dissolved oxygen level has increased from 6 to 12 mg/L. Low total coliform and fecal coliform counts indicated improvement in the bacteriological quality of water. The results of the present investigation establish a significant improvement in water quality.

Keywords: COVID-19; Lockdown; Water pollution; Total suspended solids; Total dissolved solids; Turbidity; Chemical oxygen demand; Biochemical oxygen demand; Dissolved oxygen; Total coliform; Fecal coliform; River Ganga

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