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**Distribution of natural organic matter in drinking water supplies of eastern region of India: Challenges and issues****Jaydev Kumar Mahato, Ashok Kumar and S K Gupta**

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Disinfection by chlorine in drinking water treatment is of paramount importance to prevent water borne diseases, spread by microorganism or bacteria. Tragically, an undesirable harmful byproduct such as Trihalomethanes (THMs) formed during the disinfection practices. The present study investigated the effects of Natural Organic Matter (NOM) and other operational water quality parameters on THMs formation. The statistical analysis of THMs and other variables for five major drinking Water Treatment Plants (WTPs) in India revealed that amongst four THMs compound, chloroform exists in the highest levels, ranged varied from 275.8 to 367.2  $\mu\text{L}$ , exceeded the prescribed limits of Bureau of Indian Standard (IS 10500: 2012) (200  $\mu\text{g/l}$ ) in all five WTPs. Additionally, the maximum concentration of Total Trihalomethanes (TTHMs) were obtained in VWTP (400  $\mu\text{L}$ ) followed by IGWTP (381  $\mu\text{L}$ ), BWPT (335  $\mu\text{L}$ ), RWPT (326  $\mu\text{L}$ ) and lastly DWTP (309  $\mu\text{L}$ ) all exceeded the US EPA regulatory limit of 80  $\mu\text{g/L}$ . Applied Pearson correlation matrix were identified TOC, DOC and UV254 as key surrogate of NOM liable to form the THMs. Elevated concentration of THMs found in these water supply systems warrants an in depth attention to the regulatory agencies and management authority for controlling their levels in supply water to protect the community from the probable health hazards.

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