Distribution of Sewage Pollution Indicator Bacteria in Mandovi-Zuari Estuaries

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Raw sewage disposal into the Mandovi and Zuari estuaries has been a common practice in the history of the estuaries. It is only recently that sewage from major cities like Panaji is treated before disposing into the estuary. With increasing population, the amount of sewage dumped in to the estuary has also increased. It is therefore of interest to determine what are the present levels of pollution indicator bacteria due to sewage disposal. This information would then help determine whether or not and the extent of waste treatment and disposal procedures to be put in place to safeguard the natural environments. In this presentation, we describe spatial distribution and annual cycle of sewage pollution indicator (total coliforms and total fecal coliforms) and human pathogenic bacteria (*Escherichia coli* and *Streptococcus faecalis*) in water and sediment samples in the Mandovi and Zuari estuaries. Samples were collected from different locations in these estuaries and analyzed for ascertaining the water quality from the point of view of microbiological pollution. From this extensive analysis, it is observed that the waters in these estuaries are unfit for bathing as per the USEPA standards. Steps must be put in place to control the flux of raw sewage and related pollutants in these estuaries. Promotion and implementation of actions leading to reduction in sewage pollution indicating bacteria and pathogenic microbes are needed. Sewage treatment at all domestic settlements and, avoidance of indiscriminate disposal of other organic wastes are required.