

Pollution at a discharge point of treated effluent from a textile mill factory, in Kalu Ganga, evaluated by water quality parameters and histological alterations (biomarker of effect) in *Rasbora daniconius* and *Puntius sarana*

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Treated textile factory effluent could have remaining contaminants that could change water quality parameters in receiving water. Kalu Ganga receives a large volume of treated effluent at the area of Narthupana from a textile mill factory. Present study was planned to evaluate the level of pollution at approximately 1.5Km upstream to the point source (Site A), the point source of Kalu Ganga (Site B), and about 1.5 Km downstream to the point source (Site C) using water quality parameters and Degree of Tissue Change (DTC) in gill, liver and ovarian tissues of two sensitive fish species. Fish catches of fishermen and samples collected using a cast net were observed; *Rasbora daniconius* and *Puntius sarana* that were present in sites A and C but were absent in site B were taken as two sensitive fish species. These fish were exposed to water collected from 3 sampling sites of Kalu Ganga and tissues were preserved for histological studies.

Site B had the lowest mean DO (4.94 mg l^{-1}), highest mean water temperature ($32.1 \text{ }^{\circ}\text{C}$), pH (8.40), conductivity ($11.08 \text{ } \mu\text{S/cm}^{-1}$) and Total Dissolved Solids (99.10 mg l^{-1}) compared to sites A and C ($P < 0.05$).

Mean DTC values observed for gill, liver and ovarian tissues of *Rasbora daniconius* (27.00 , 25.75 and 21.00 respectively) and *Puntius sarana* (27.00 , 16.00 and 8.00 respectively) that were exposed to water collected from site B were significantly higher ($P < 0.05$) than the DTC values recorded for respective tissues of respective fish exposed to water collected from sites A and C. Level of water pollution at the point source (site B) is significantly greater compared to upstream (site A) and downstream (site C).