



Original Research Article

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Seasonal Variations in Physico-Chemical Properties of Yamuna Water and its Suitability for Irrigation

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ABSTRACT

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Indian urbanisation at fast pace has led to increased wastewater discharge into river Yamuna which is intensively used for irrigation in urban, peri-urban and rural areas. In this backdrop, water quality of Yamuna was assessed at six sites along a stretch from Mathura, Agra and Etawah during winters, summers, rainy and post-rainy seasons. The pH of Yamuna water (7.01-7.84) did not register conspicuous variations in different seasons and sites. Other physico-chemical parameters were maximum during summers (EC: 2.6 - 3 dS/m, bicarbonate: 4.2 - 5.2 meq l⁻¹, chloride: 7.0-8.6 meq l⁻¹, sodium adsorption ratio (SAR): 5.1 - 8.28 and boron: 1.2 - 2.0 mg l⁻¹). Nitrate was maximum (5.6 - 6.8 mg l⁻¹) during rainy season. Residual sodium carbonate (RSC) remained negative in all seasons and sites. Since, several physico-chemical parameters varied within slight to moderate restrictive use range, therefore, Yamuna water can be used for irrigation with certain recommended precautions.