

A Comprehensive Study of Seasonal Variations in Water Quality Parameters of the Kal River, Mangaon, Raigad (Maharashtra, India)

¹Dr.Jagdish B. Thakur, ²Dr. Baliram T.Vibhute, ³Amol J.Ghoti, ³Huda Dalvi

^{1,2}Department of Chemistry,

M.T.E.S. Doshi Vakil Arts College and G.C.U.B. Science & Commerce College, Goregaon, Raigad

³Dr.A.R.Undre Womens Degree College Borli -Shriwardhan,Raigad (MS), India

jbthakur123@gmail.com

Abstract: *This study presents a detailed assessment of the seasonal variations in the water quality of the Kal River, located in Mangaon, Raigad district, Maharashtra, India. Water samples were collected from selected sites along the river during three distinct season pre-monsoon, monsoon, and post-monsoon to analyze key physicochemical and biological parameters, including pH, temperature, dissolved oxygen (DO), biochemical oxygen demand (BOD), chemical oxygen demand (COD), turbidity, total dissolved solids (TDS), and microbial load. The results indicate significant seasonal fluctuations influenced by rainfall patterns, surface runoff, and anthropogenic activities such as agriculture and domestic discharge. The Water Quality Index (WQI) was computed to classify the water based on its suitability for drinking and irrigation purposes. The findings reveal that water quality tends to deteriorate during the monsoon due to increased runoff and contamination, while relatively better quality is observed during the pre- and post-monsoon seasons. The study highlights the need for regular monitoring and sustainable watershed management practices to preserve the ecological and public health functions of the Kal River.*

Keywords: Kal River, water quality, seasonal variation, physicochemical parameters, Raigad district, Maharashtra, Water Quality Index (WQI), river pollution, monsoon effect, surface runoff

