

**Investigating The Effect Of Adsorbent Dosage On Chromium (Iii) Ions  
Adsorption Onto Banana Petiole Biomass.**

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**Abstract.**

Water pollution has been the major cause of shortage of clean water in Kenya. This prompts citizens to use wastewater for domestic purposes. For example river Kapingazi in Embu where waste from the region is dumped is used by the residents for irrigation and domestic purposes. Industrialization which is the major cause of water pollution contaminates water with heavy metal ions. Heavy metal ions are a threat to the health of human beings due to their toxic and bioaccumulation behavior. Such heavy metals include lead, arsenic, chromium, zinc, copper and mercury. Some of these heavy metals such as copper are essential but become toxic in high concentrations. Therefore there is need to reduce their presence in water through treatment. Conventional methods for wastewater treatment include chemical precipitation, reverse osmosis, ion exchange, membrane filtration and biosorption. Most of methods of wastewater treatment are expensive and partially remove heavy metals ions. Currently biosorption is being investigated for its ability to remove heavy metal ions. Biosorption uses readily available biological and agricultural wastes such as banana peels, carrot peels, maize stalk charcoal, and banana petiole and so on to remove heavy metal ions from water. In this study banana petiole biomass will be used to remove Cr (III) ions from a prepared solution containing Cr (III) ions. Batch experiments on varying contact time and biomass dosage parameters will be done to determine the efficiency of the biomass in removing the metal ions. Atomic absorption spectroscopy will then be used to determine the absorbance of the samples. The results of this project will be used to determine the viability of using banana petiole biomass as an adsorbent. Furthermore they will be used to provide an alternative to the available adsorbents.