

BANANA PEEL AND ORANGE PEEL AS ALTERNATIVE BIOSORBENTS FOR BOD REDUCTION AND REMOVAL OF CHEMICAL POLLUTANTS FROM VAIGAI RIVER WATER

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ABSTRACT

Water pollution causes a serious problem in India. Recently people were infected with many diseases due to polluted water. Vaigai River is one of the most important rivers in South India. Recently it was highly polluted by domestic, agricultural and industrial wastes. Presence of ammonia, nitrate, phosphate in large quantities and high BOD levels makes the river water unsuitable for consuming. In biological method of water treatment, use of sorbent materials derived from plant has been shown to be more effective for the removal of pollutants from waste water (Grath *et al.*, 2001). In this study, the effectiveness of banana peel and orange peel as natural adsorbents to reduce BOD and chemical pollutants of Vaigai river water were determined. Five different concentrations (0.5mg, 1g, 1.5g, 2g & 2.5g) of both the biological sample powders were used. Physical and chemical parameters of polluted river water were tested in TWAD, Madurai. BOD of river water before and after treatment with fruit peel powder was estimated. Result of the study showed that at maximum concentration of 2.5g of banana peel efficiently reduced BOD compared to orange peel. But both the biological samples showed higher efficiency in the reduction of ammonia, nitrite and phosphate in water at maximum concentration of 2.5g. From this study it was revealed that banana peel and orange peel could be used as an alternative to treat waste water. This study also helps to reduce the dumping of biological waste as trash in the environment.

KEY WORDS: Adsorbent, Banana peel, BOD, Orange peel, Pollutant and Vaigai River.

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