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## Usage of Biosorbent Material for the Removal of Nitrate from Wastewater

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Nitrate can cause serious environmental and human health problems. Effluent from different industries and excessive use of fertilizers, have increased the level of nitrate in ground and surface water. Nitrate can convert to nitrite, and as a result can lead to Methemoglobinemia and cancer. Therefore, different organizations has set standard limits for nitrate and nitrite. The USEPA has set a MCLG of 10 mg N/L for nitrate, and 1 mg N/L for nitrite. The removal of nitrate from water and wastewater is very important, to ensure the availability of clean water. Different plant materials such as banana peel, rice hull, coconut and bamboo shells, have been studied as biosorbents, for the removal of nitrates from water. The use of abundantly existing plant material as an adsorbent material, and the lack of energy requirement for the adsorption process, makes biosorption a sustainable approach. Therefore, in this research, the fruit of the plant was investigated for its ability to act as a biosorbent to remove the nitrate from wastewater. The effect of pH on nitrate removal was studied, using both raw and chemically activated fruit. Results, demonstrated that the fruit needs to be chemically activated before usage, to remove the nitrate from wastewater. pH did not have a significant effect on the adsorption process, with maximum adsorption of nitrate occurring at pH 4. SEM/EDX results demonstrated no change in the surface of the fruit.

## Biography

Abouleish has completed his PhD at the age of 31 years from Tennessee Technological University in Environmental Science and Technology. He is an Associate Professor at the American University of Sharjah, in the United the Arab Emirates. He has published different research in reputed journals that is related to Chemical Engineering, Water and Wastewater treatment, Environmental Science and other research areas.

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