

Removal of nitrates from water through the use Chia seed

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Abstract:

In this research, Chia seeds will be collected from local food manufacturers; Chia seeds were used and treated by natural methods “Green process” then converted into new material. The experimental conditions will be optimized by controlling various parameters that include: the amount of material, concentration of nitrate, contact time, drying temperature, pH of solution, solution temperature, and particle size. The methods after optimization will be applied to drinking water. In order to identify the mechanism of removal, the expected side products will be analyzed such as ammonia and nitrite. These ions in addition to nitrate will be analyzed spectrophotometry and Kjeldahl technique. The bacterial de-nitrification aspect will be considered and investigated. Recovery of the Chia seeds material will be investigated in order to be used several times. The Chia seed removal efficiency increased to enhance the efficiency of the proposed filter. In order to increase the percent of nitrate, removal, and currently in this research we study other contaminants removal like dyes and chloride.