

## Elimination of Phosphorus by Activated Carbon Prepared from Algerian Dates Stones

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**Abstract :** The current work has a goal of the preparation of activated carbon from the stones of dates from southern Algeria (El-Oued province) using a simple pyrolysis proceeded by chemical impregnation in sulphuric acid. For the preparation of the carbon, we choose the diameter of the pellets (0.5-1)mm, activation by acid and water (1:1), carbonization at 450°C. The prepared carbon has the following characteristics: specific surface 125.86 m<sup>2</sup>/g, methylene blue number 40, CCE = 0.3meq.g/l, IR and micrographics SEM. The activated carbon thus obtained is used at the water purification in wastewater treatment plant (WWTP) at Kouinine, El- Oued province, to totally eliminate phosphorus. We analyzed the water at the WWTP before the purification procedure. In this study, we have looked at the effect of the following parameters on the adsorption of carbon: the pH, the contact time (Tc) and the agitation speed (Va). The best conditions for phosphorus adsorption are: pH=4 or pH >5, Tc = 60 min and Va = 900 rotations per minute.

**Keywords :** activated carbon, date stones, pyrolysis, phosphate pollutants

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